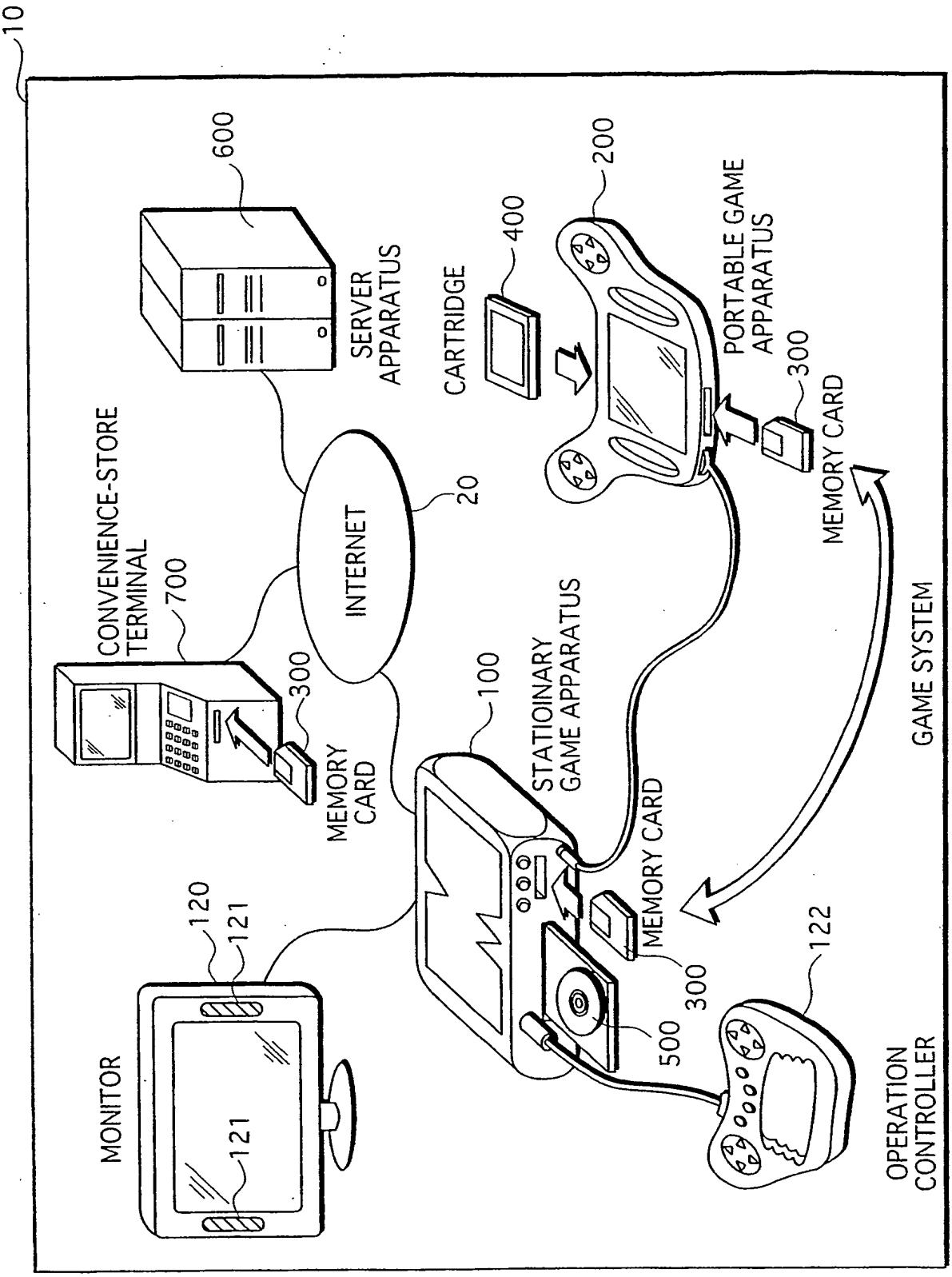

10
600
SERVER APPARATUS
CARTRIDGE
400
200
PORTABLE GAME APPARATUS
300
MEMORY CARD
CONVENIENCE-STORE TERMINAL
700
INTERNET
20
300
MEMORY CARD
100
STATIOINARY GAME APPARATUS
MEMORY CARD
GAME SYSTEM
120
121
MONITOR
121
500
300
122
OPERATION CONTROLLER

FIG.1

FIG.2

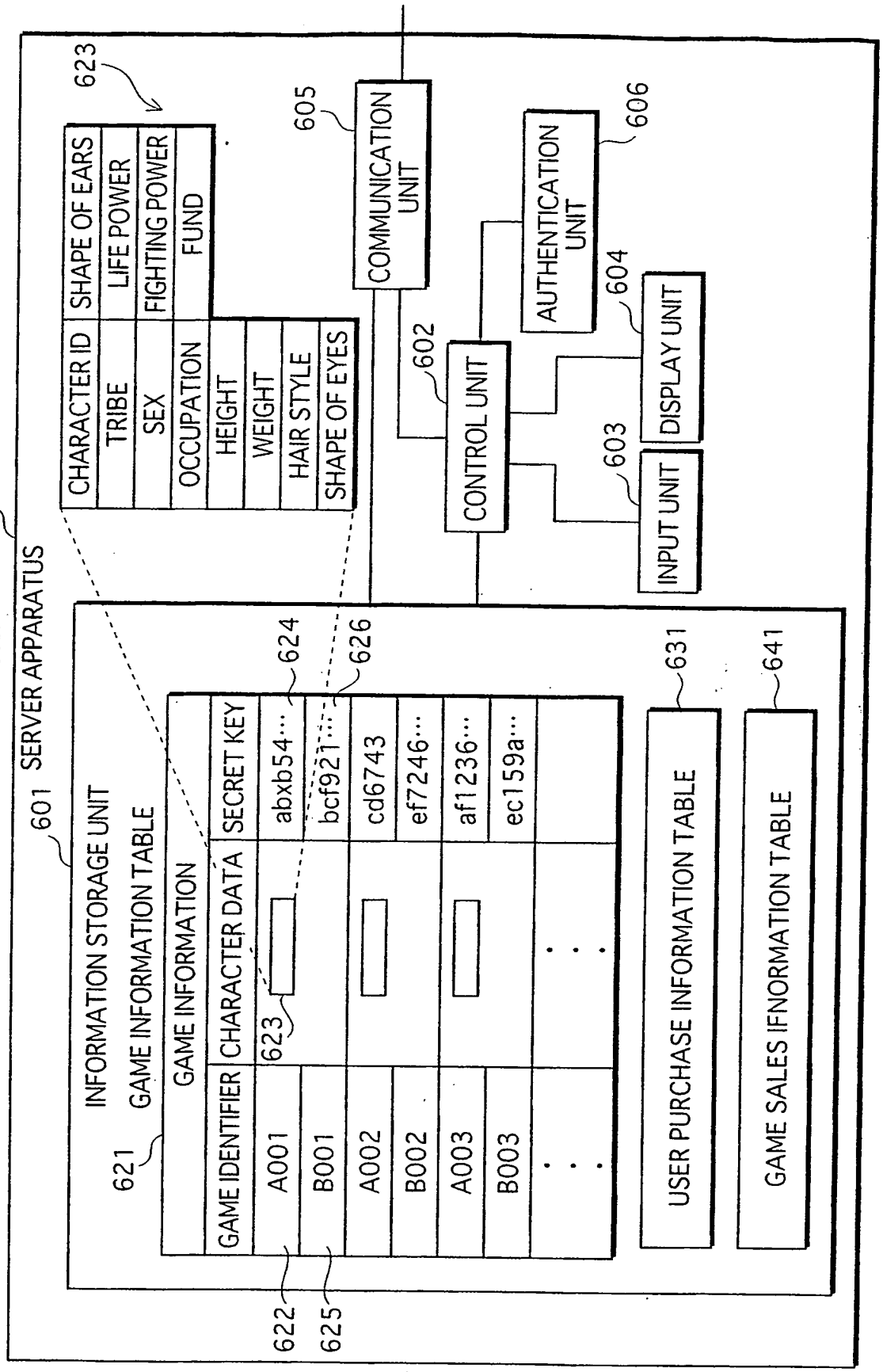

600
SERVER APPARATUS
601
INFORMATION STORAGE UNIT
GAME INFORMATION TABLE
621
GAME INFORMATION
GAME IDENTIFIER
CHARACTER DATA
SECRET KEY
623
624
626
A001
B001
A002
B002
A003
B003
abxb54…
bcf921…
cd6743
ef7246…
af1236…
ec159a…
622
625
CHARACTER ID
TRIBE
SEX
OCCUPATION
HEIGHT
WEIGHT
HAIR STYLE
SHAPE OF EYES
SHAPE OF EARS
LIFE POWER
FIGHTING POWER
FUND
623
605
COMMUNICATION UNIT
602
CONTROL UNIT
AUTHENTICATION UNIT
606
604
DISPLAY UNIT
603
INPUT UNIT
631
USER PURCHASE INFORMATION TABLE
641
GAME SALES IFNORMATION TABLE

FIG.3

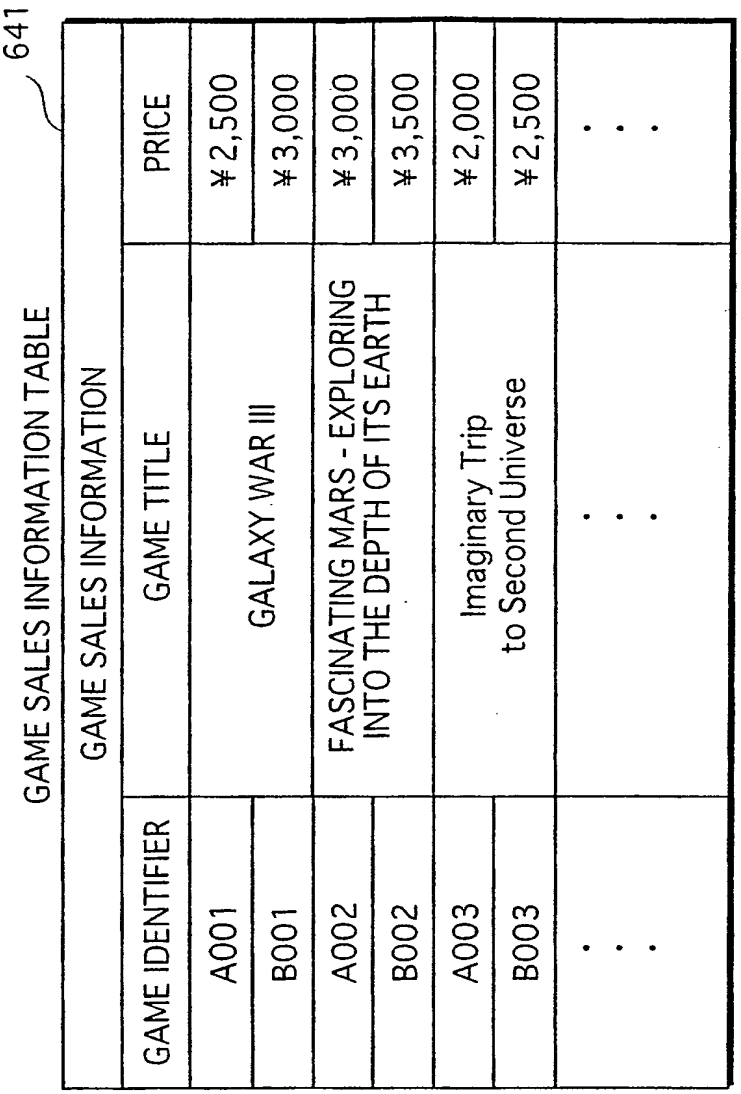

641
GAME SALES INFORMATION TABLE
GAME SALES INFORMATION
GAME IDENTIFIER
GAME TITLE
PRICE
A001
GALAXY WAR III
¥2,500
B001
¥3,000
A002
FASCINATING MARS - EXPLORING INTO THE DEPTH OF ITS EARTH
¥3,000
B002
¥3,500
A003
Imaginary Trip to Second Universe
¥2,000
B003
¥2,500

FIG.4

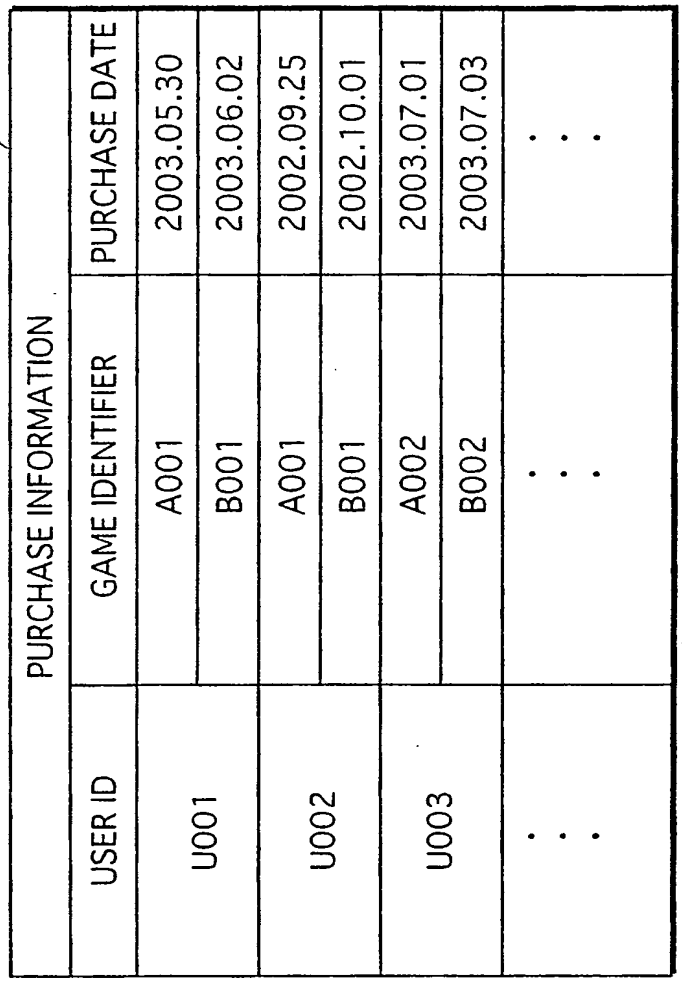

631
USER PURCHASE INFORMATION TABLE
PURCHASE INFORMATION
USER ID
GAME IDENTIFIER
PURCHASE DATE
U001
A001
2003.05.30
B001
2003.06.02
U002
A001
2002.09.25
B001
2002.10.01
U003
A002
2003.07.01
B002
2003.07.03

FIG.5

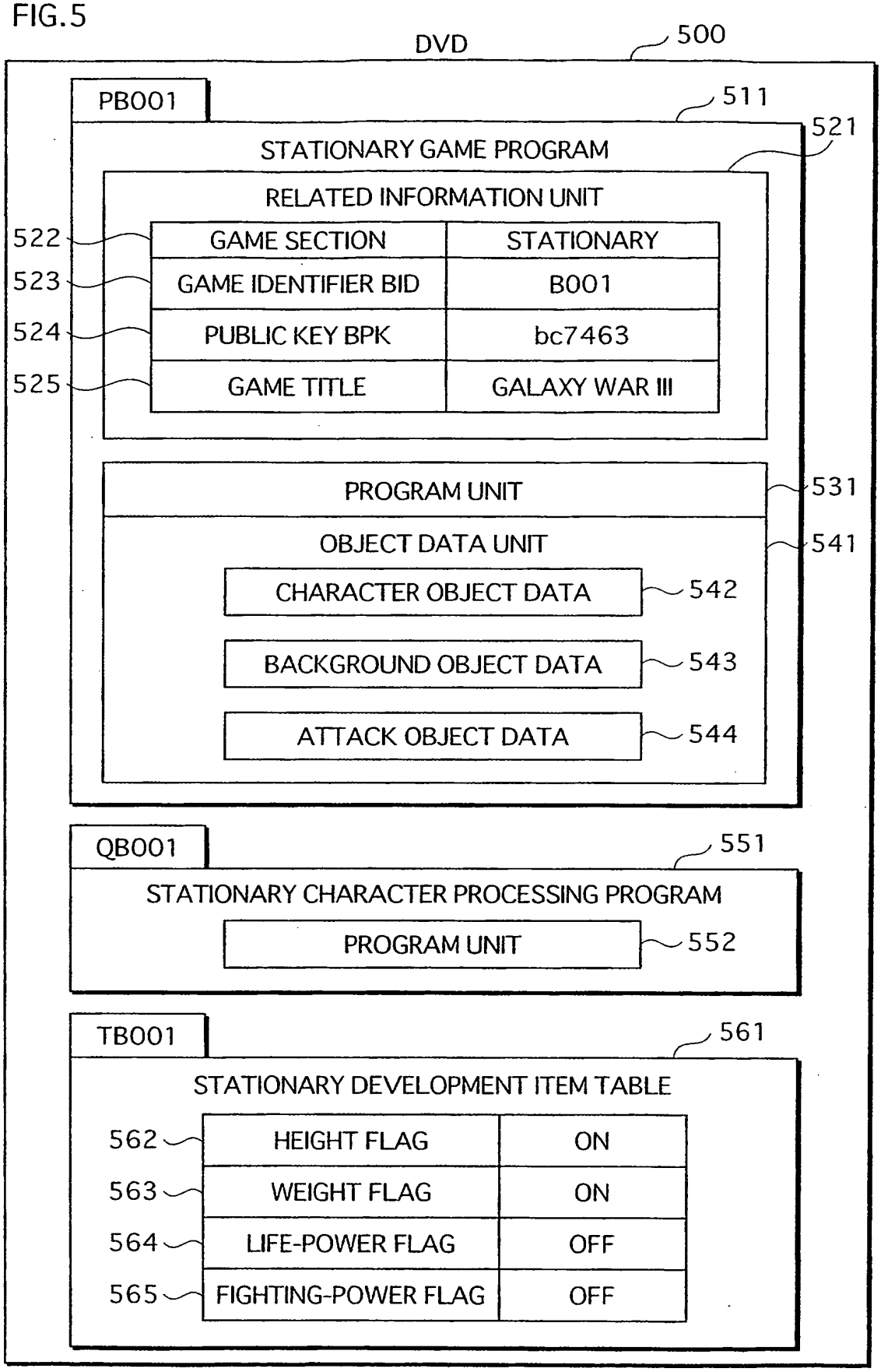

DVD
500
PB001
511
521
STATIONARY GAME PROGRAM
RELATED INFORMATION UNIT
522
GAME SECTION
STATIONARY
523
GAME IDENTIFIER BID
B001
524
PUBLIC KEY BPK
bc7463
525
GAME TITLE
GALAXY WAR III
PROGRAM UNIT
531
OBJECT DATA UNIT
541
CHARACTER OBJECT DATA
542
BACKGROUND OBJECT DATA
543
ATTACK OBJECT DATA
544
QB001
551
STATIONARY CHARACTER PROCESSING PROGRAM
PROGRAM UNIT
552
TB001
561
STATIONARY DEVELOPMENT ITEM TABLE
562
HEIGHT FLAG
ON
563
WEIGHT FLAG
ON
564
LIFE-POWER FLAG
OFF
565
FIGHTING-POWER FLAG
OFF

FIG.6

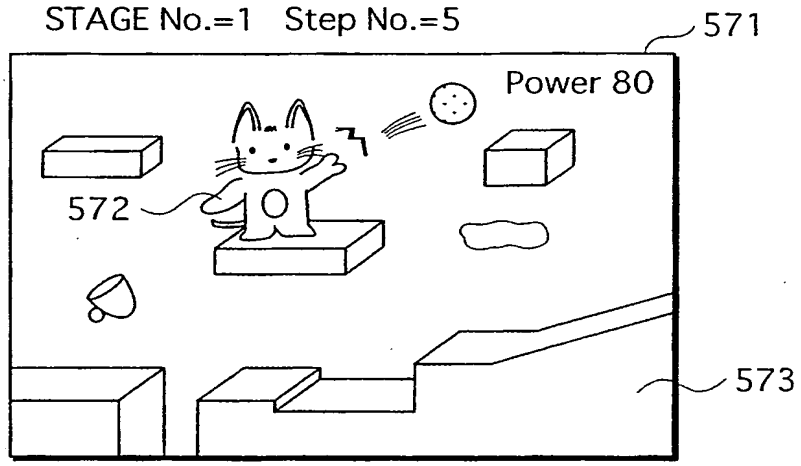


FIG.7

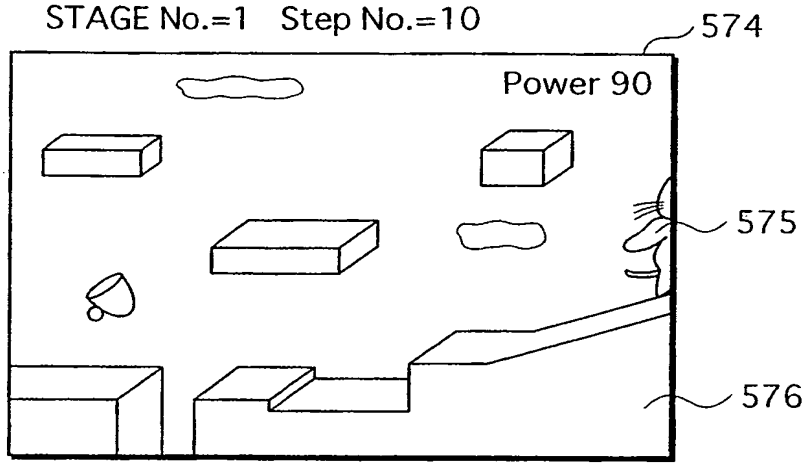


FIG.8

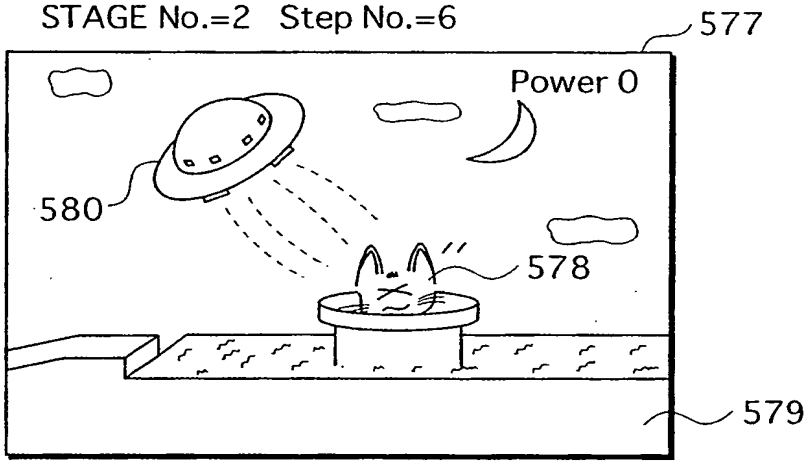


FIG.9

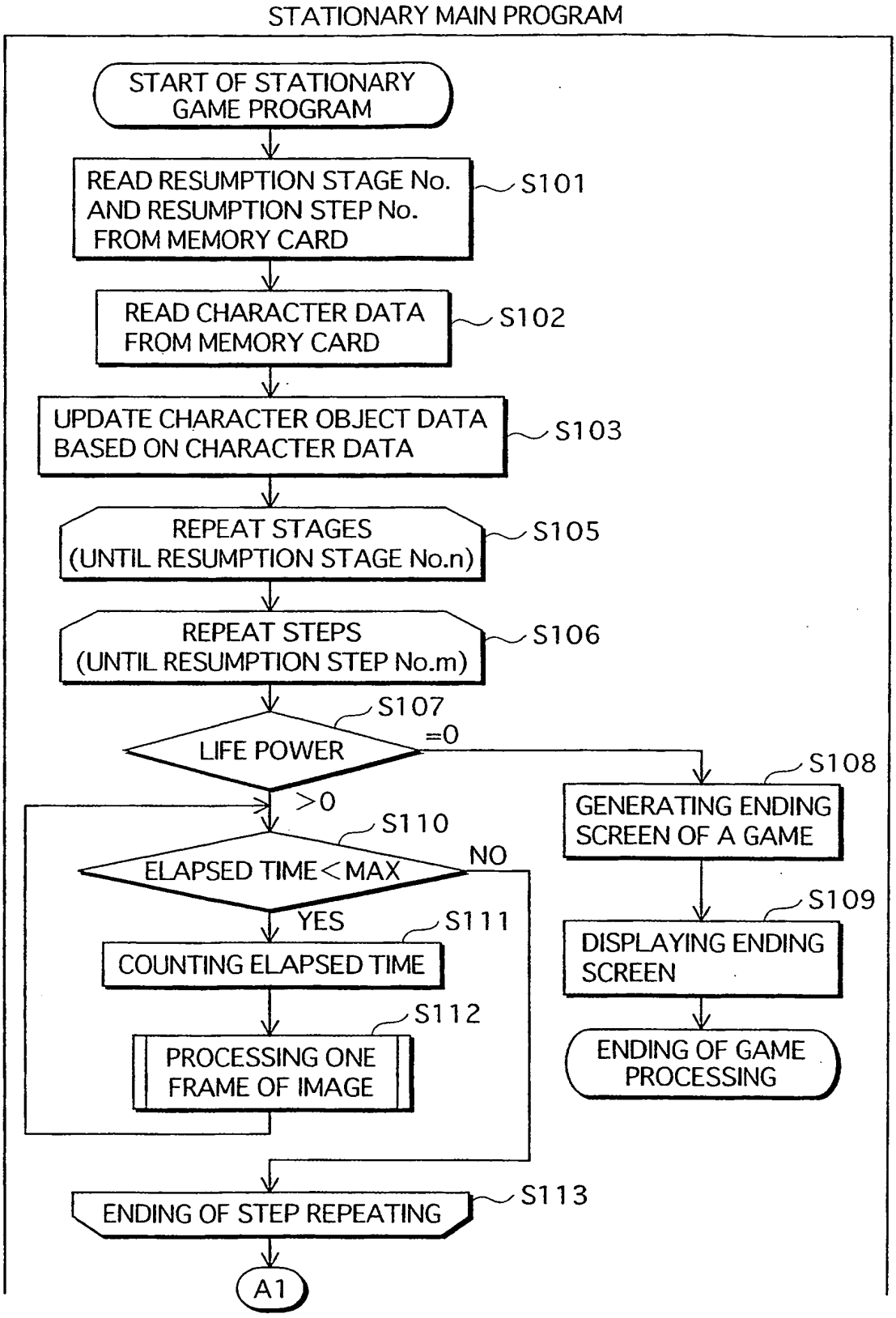

STATIONARY MAIN PROGRAM
START OF STATIONARY GAME PROGRAM
READ RESUMPTION STAGE No. AND RESUMPTION STEP No. FROM MEMORY CARD
S101
READ CHARACTER DATA FROM MEMORY CARD
S102
UPDATE CHARACTER OBJECT DATA BASED ON CHARACTER DATA
S103
REPEAT STAGES (UNTIL RESUMPTION STAGE No.n)
S105
REPEAT STEPS (UNTIL RESUMPTION STEP No.m)
S106
S107
LIFE POWER
=0
>0
S108
GENERATING ENDING SCREEN OF A GAME
S109
DISPLAYING ENDING SCREEN
ENDING OF GAME PROCESSING
S110
ELAPSED TIME<MAX
NO
YES
S111
COUNTING ELAPSED TIME
S112
PROCESSING ONE FRAME OF IMAGE
ENDING OF STEP REPEATING
S113
A1

FIG.10

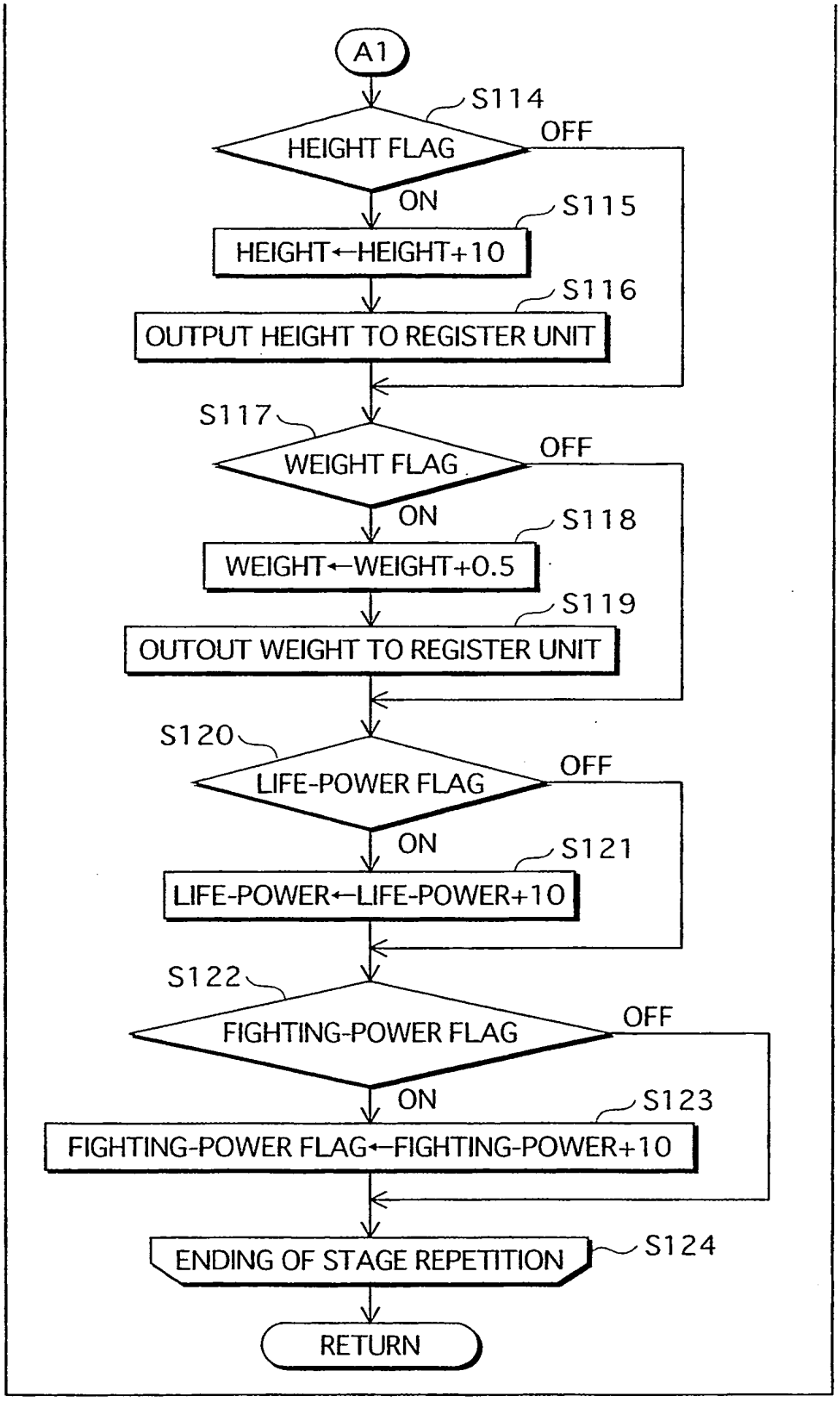

A1
S114
HEIGHT FLAG
OFF
ON
S115
HEIGHT←HEIGHT+10
S116
OUTPUT HEIGHT TO REGISTER UNIT
S117
WEIGHT FLAG
OFF
ON
S118
WEIGHT←WEIGHT+0.5
S119
OUTOUT WEIGHT TO REGISTER UNIT
S120
LIFE-POWER FLAG
OFF
ON
S121
LIFE-POWER←LIFE-POWER+10
S122
FIGHTING-POWER FLAG
OFF
ON
S123
FIGHTING-POWER FLAG←FIGHTING-POWER+10
ENDING OF STAGE REPETITION
S124
RETURN

FIG.11

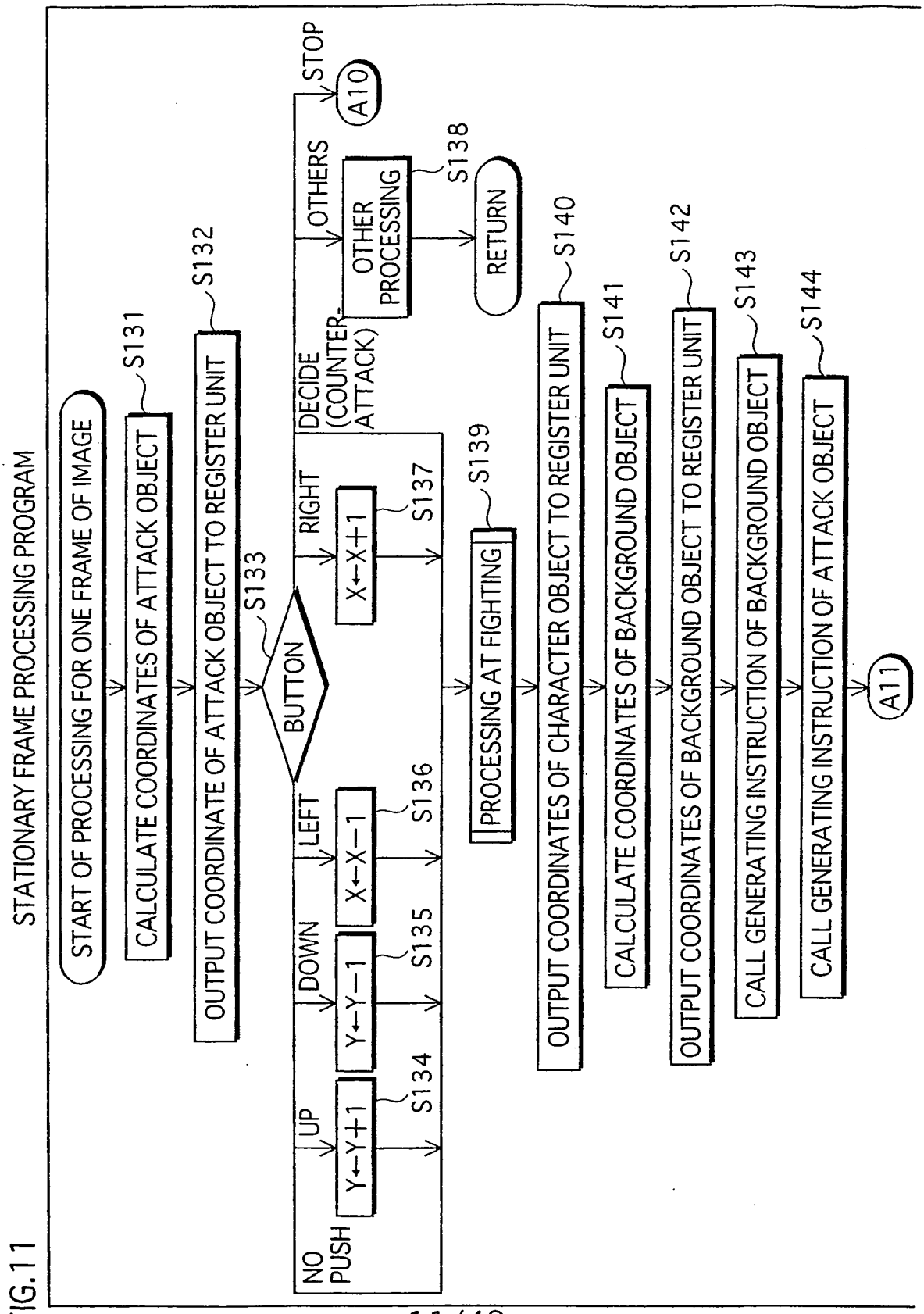

STATIONARY FRAME PROCESSING PROGRAM
START OF PROCESSING FOR ONE FRAME OF IMAGE
CALCULATE COORDINATES OF ATTACK OBJECT
S131
OUTPUT COORDINATE OF ATTACK OBJECT TO REGISTER UNIT
S132
BUTTON
S133
NO PUSH
UP
Y←Y+1
S134
DOWN
Y←Y−1
S135
LEFT
X←X−1
S136
RIGHT
X←X+1
S137
DECIDE (COUNTER-ATTACK)
OTHERS
OTHER PROCESSING
S138
STOP
A10
RETURN
PROCESSING AT FIGHTING
S139
OUTPUT COORDINATES OF CHARACTER OBJECT TO REGISTER UNIT
S140
CALCULATE COORDINATES OF BACKGROUND OBJECT
S141
OUTPUT COORDINATES OF BACKGROUND OBJECT TO REGISTER UNIT
S142
CALL GENERATING INSTRUCTION OF BACKGROUND OBJECT
S143
CALL GENERATING INSTRUCTION OF ATTACK OBJECT
S144
A11

FIG.12

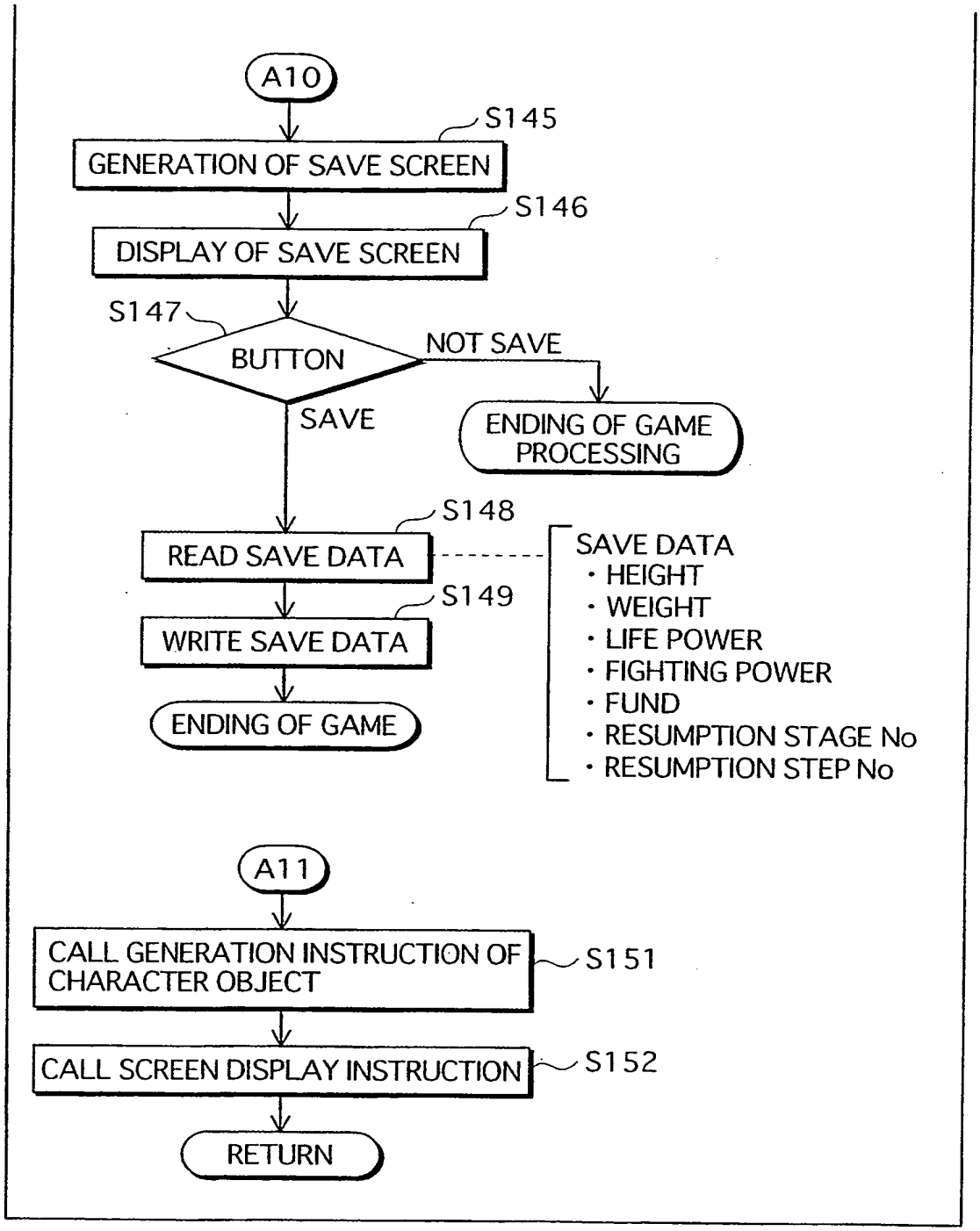

A10
S145
GENERATION OF SAVE SCREEN
S146
DISPLAY OF SAVE SCREEN
S147
BUTTON
NOT SAVE
SAVE
ENDING OF GAME PROCESSING
S148
READ SAVE DATA
SAVE DATA
・HEIGHT
・WEIGHT
・LIFE POWER
・FIGHTING POWER
・FUND
・RESUMPTION STAGE No
・RESUMPTION STEP No
S149
WRITE SAVE DATA
ENDING OF GAME
A11
CALL GENERATION INSTRUCTION OF CHARACTER OBJECT
S151
CALL SCREEN DISPLAY INSTRUCTION
S152
RETURN

FIG.13

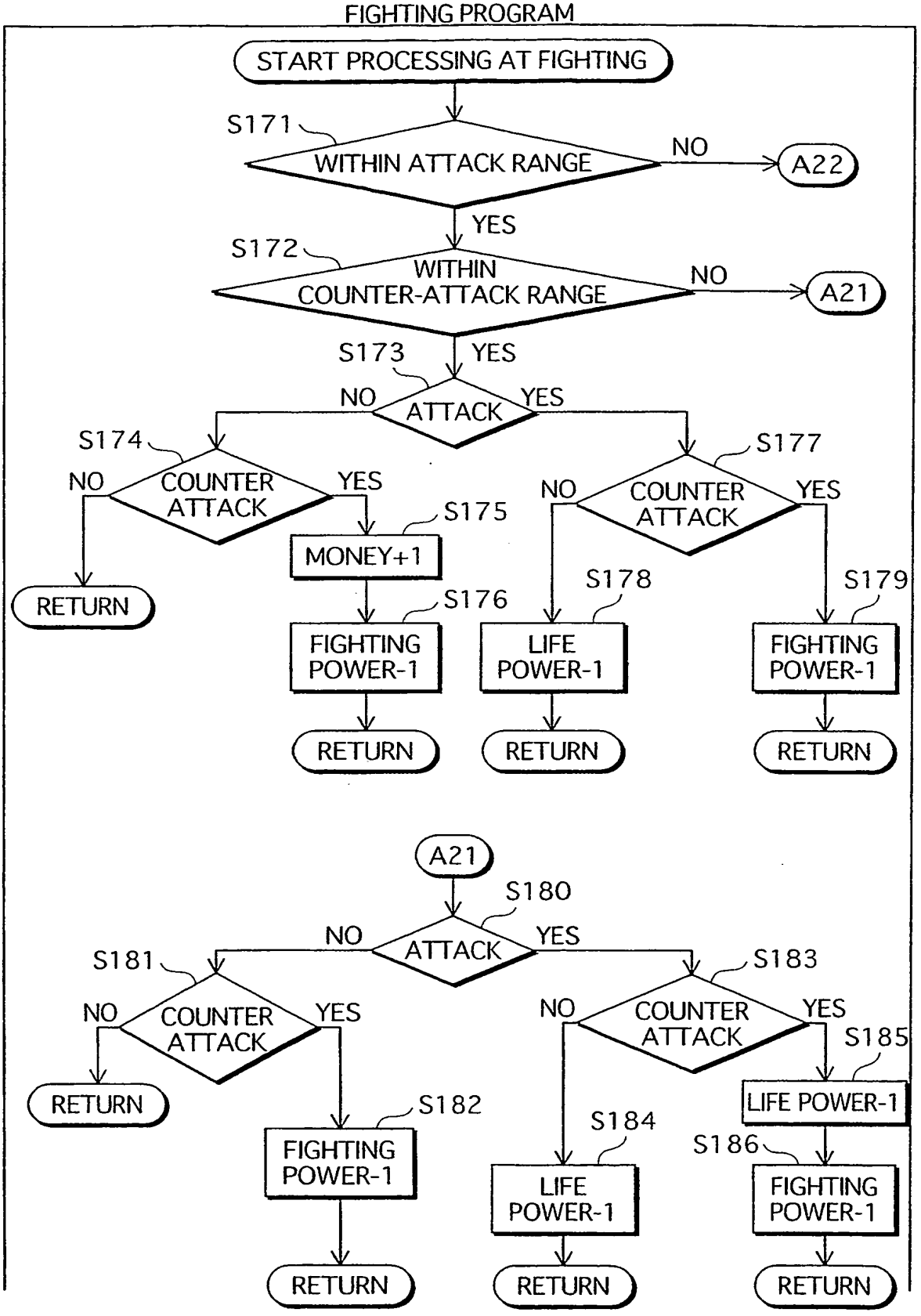

FIGHTING PROGRAM
START PROCESSING AT FIGHTING
S171
WITHIN ATTACK RANGE
NO
A22
YES
S172
WITHIN COUNTER-ATTACK RANGE
NO
A21
YES
S173
ATTACK
NO
YES
S174
COUNTER ATTACK
NO
YES
RETURN
S175
MONEY+1
S176
FIGHTING POWER-1
RETURN
S177
COUNTER ATTACK
NO
YES
S178
LIFE POWER-1
RETURN
S179
FIGHTING POWER-1
RETURN
A21
S180
ATTACK
NO
YES
S181
COUNTER ATTACK
NO
YES
RETURN
S182
FIGHTING POWER-1
RETURN
S183
COUNTER ATTACK
NO
YES
S184
LIFE POWER-1
RETURN
S185
LIFE POWER-1
S186
FIGHTING POWER-1
RETURN

FIG.14

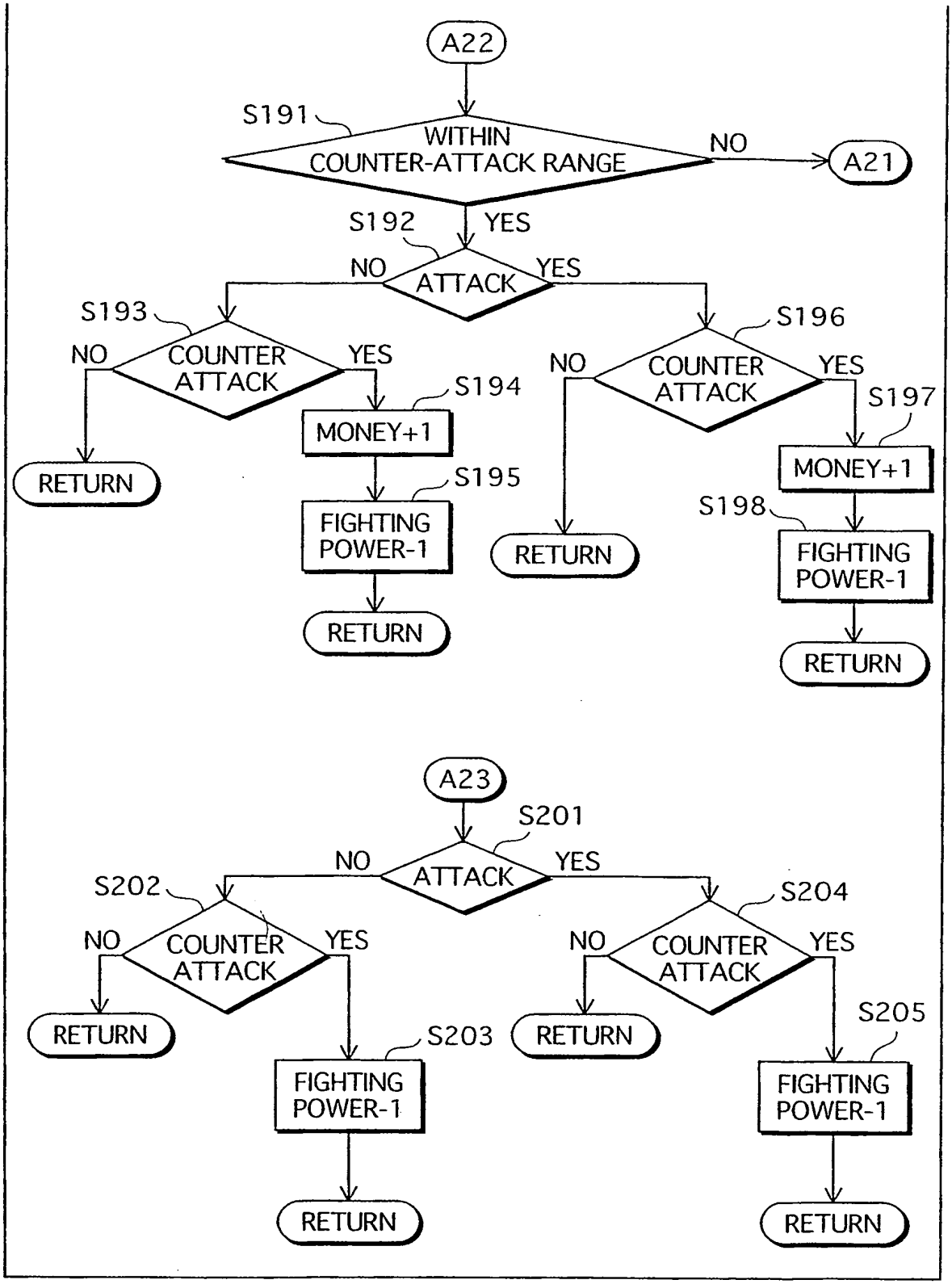

A22
S191
WITHIN COUNTER-ATTACK RANGE
NO
A21
YES
S192
ATTACK
NO
YES
S193
COUNTER ATTACK
NO
YES
RETURN
S194
MONEY+1
S195
FIGHTING POWER-1
RETURN
S196
COUNTER ATTACK
NO
YES
RETURN
S197
MONEY+1
S198
FIGHTING POWER-1
RETURN
A23
S201
ATTACK
NO
YES
S202
COUNTER ATTACK
NO
YES
RETURN
S203
FIGHTING POWER-1
RETURN
S204
COUNTER ATTACK
NO
YES
RETURN
S205
FIGHTING POWER-1
RETURN

FIG.15

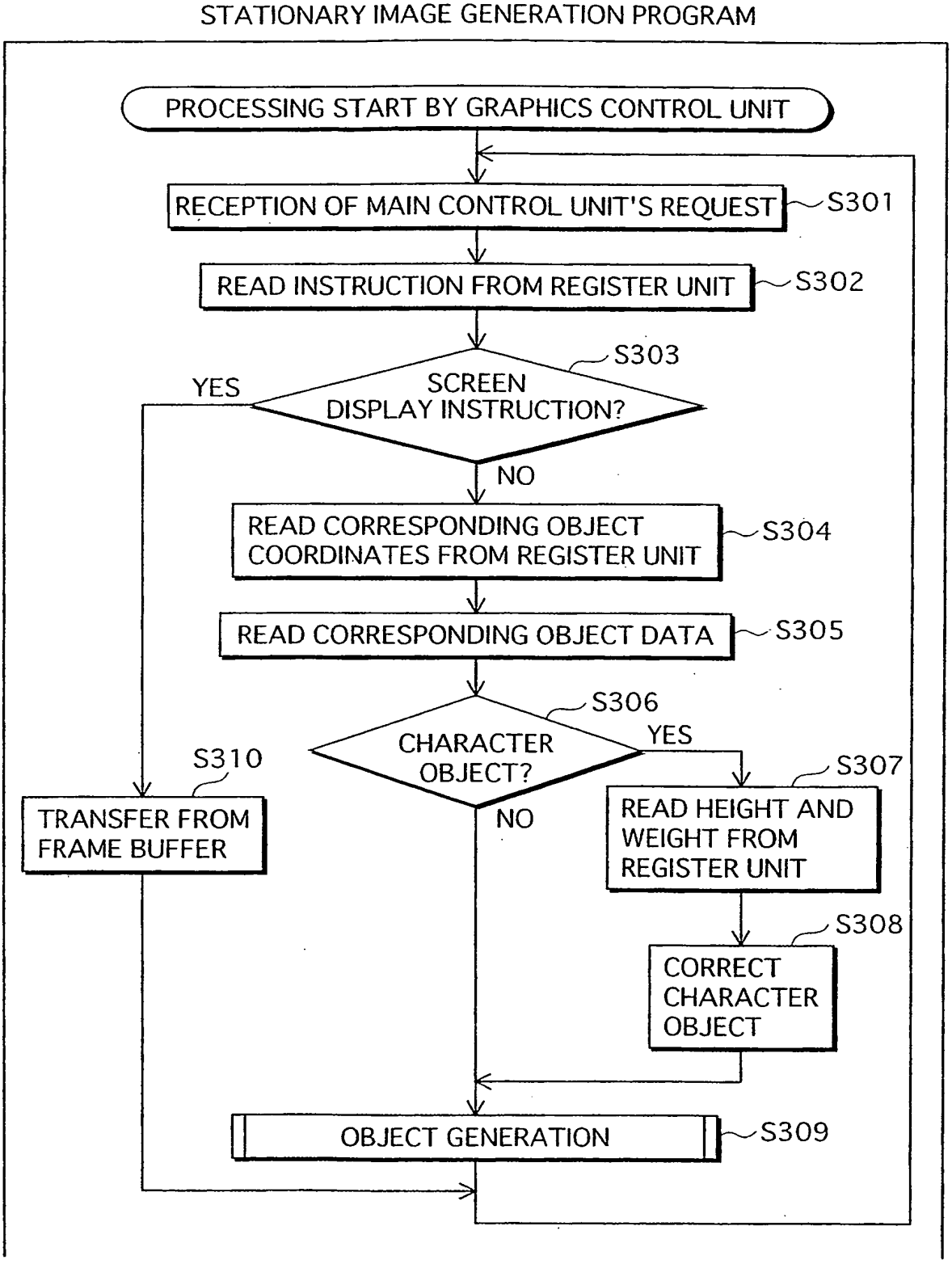
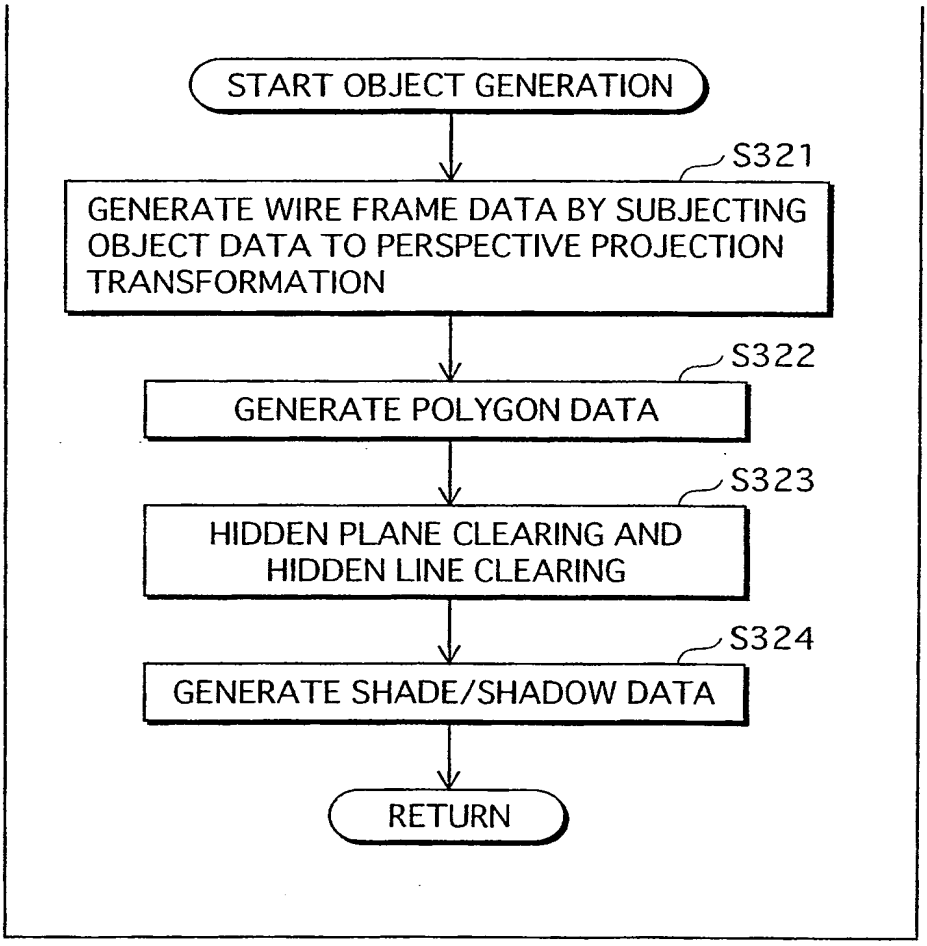

STATIONARY IMAGE GENERATION PROGRAM
PROCESSING START BY GRAPHICS CONTROL UNIT
RECEPTION OF MAIN CONTROL UNIT'S REQUEST
S301
READ INSTRUCTION FROM REGISTER UNIT
S302
S303
SCREEN DISPLAY INSTRUCTION?
YES
NO
READ CORRESPONDING OBJECT COORDINATES FROM REGISTER UNIT
S304
READ CORRESPONDING OBJECT DATA
S305
S306
CHARACTER OBJECT?
YES
NO
S307
READ HEIGHT AND WEIGHT FROM REGISTER UNIT
S308
CORRECT CHARACTER OBJECT
S310
TRANSFER FROM FRAME BUFFER
OBJECT GENERATION
S309

FIG.16


START OBJECT GENERATION
S321
GENERATE WIRE FRAME DATA BY SUBJECTING OBJECT DATA TO PERSPECTIVE PROJECTION TRANSFORMATION
S322
GENERATE POLYGON DATA
S323
HIDDEN PLANE CLEARING AND HIDDEN LINE CLEARING
S324
GENERATE SHADE/SHADOW DATA
RETURN

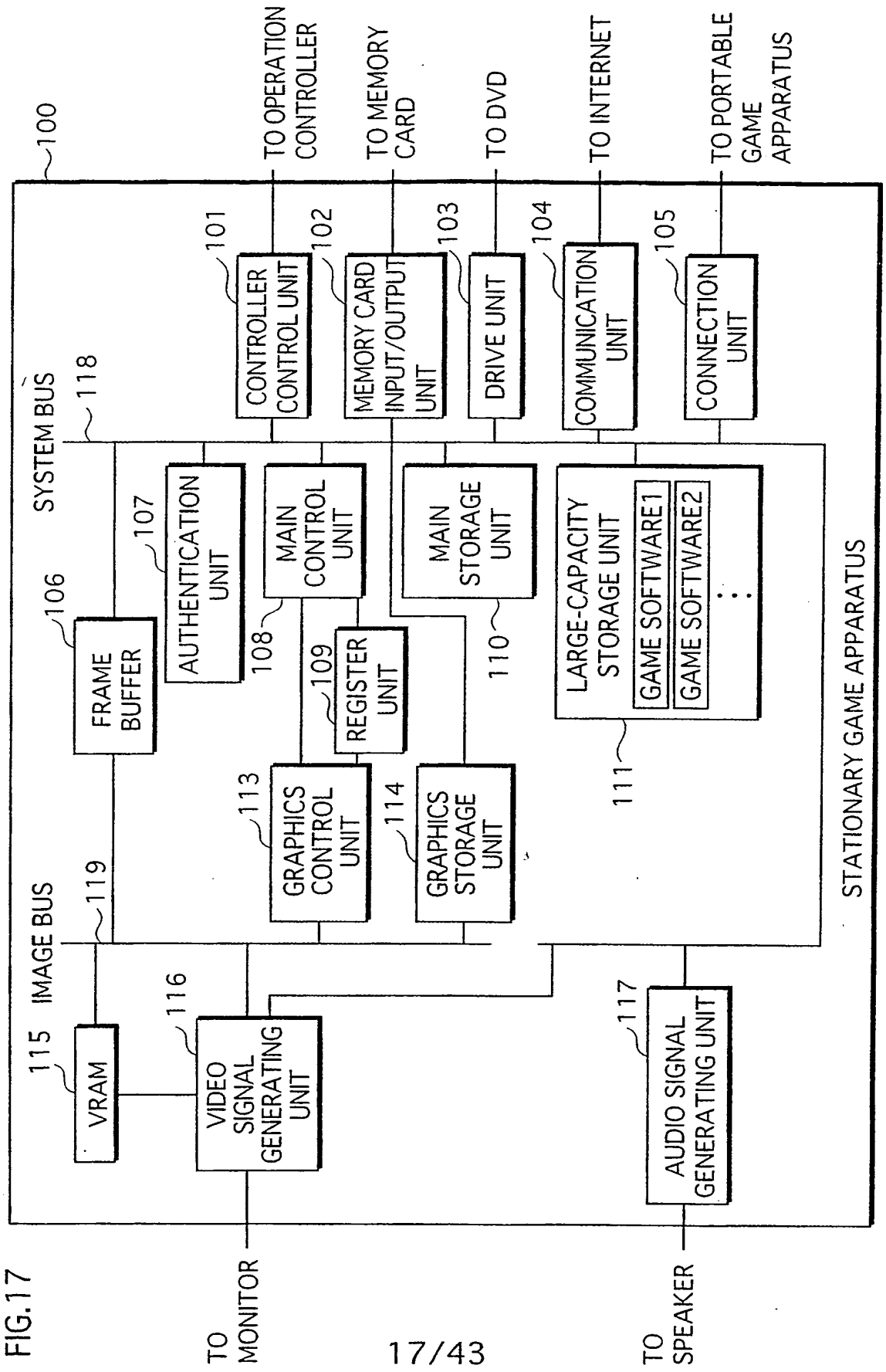

100
TO OPERATION CONTROLLER
TO MEMORY CARD
TO DVD
TO INTERNET
TO PORTABLE GAME APPARATUS
101
CONTROLLER CONTROL UNIT
102
MEMORY CARD INPUT/OUTPUT UNIT
103
DRIVE UNIT
104
COMMUNICATION UNIT
105
CONNECTION UNIT
SYSTEM BUS
118
106
FRAME BUFFER
107
AUTHENTICATION UNIT
108
MAIN CONTROL UNIT
109
REGISTER UNIT
110
MAIN STORAGE UNIT
LARGE-CAPACITY STORAGE UNIT
GAME SOFTWARE1
GAME SOFTWARE2
111
113
GRAPHICS CONTROL UNIT
114
GRAPHICS STORAGE UNIT
IMAGE BUS
119
115
VRAM
116
VIDEO SIGNAL GENERATING UNIT
117
AUDIO SIGNAL GENERATING UNIT
STATIONARY GAME APPARATUS
TO MONITOR
TO SPEAKER

FIG.17

FIG.18

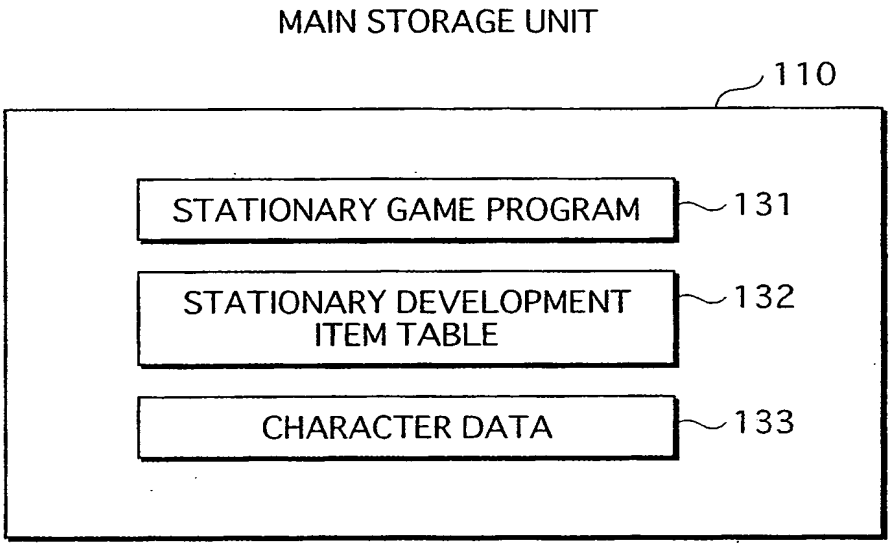

MAIN STORAGE UNIT
110
STATIONARY GAME PROGRAM
131
STATIONARY DEVELOPMENT ITEM TABLE
132
CHARACTER DATA
133

FIG.19

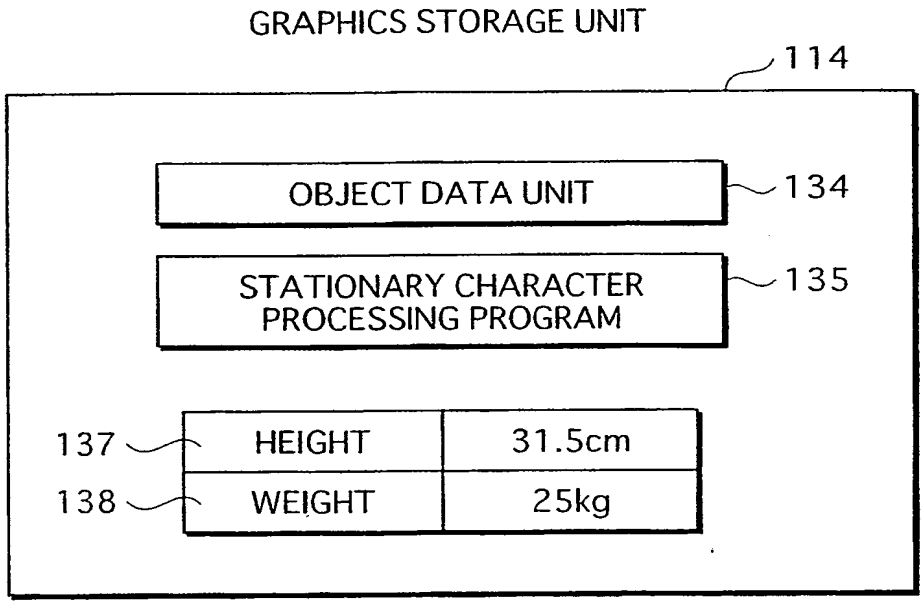

GRAPHICS STORAGE UNIT
114
OBJECT DATA UNIT
134
STATIONARY CHARACTER PROCESSING PROGRAM
135
137
HEIGHT
31.5cm
138
WEIGHT
25kg

FIG.20

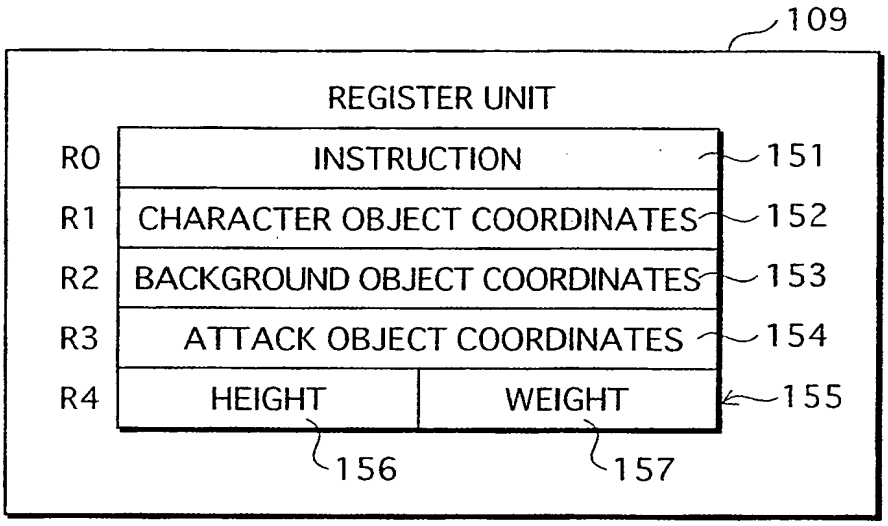

109
REGISTER UNIT
R0
INSTRUCTION
151
R1
CHARACTER OBJECT COORDINATES
152
R2
BACKGROUND OBJECT COORDINATES
153
R3
ATTACK OBJECT COORDINATES
154
R4
HEIGHT
WEIGHT
155
156
157

FIG.21

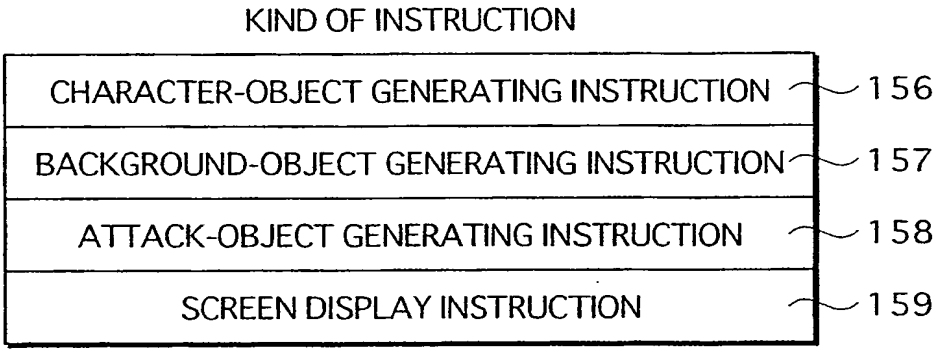
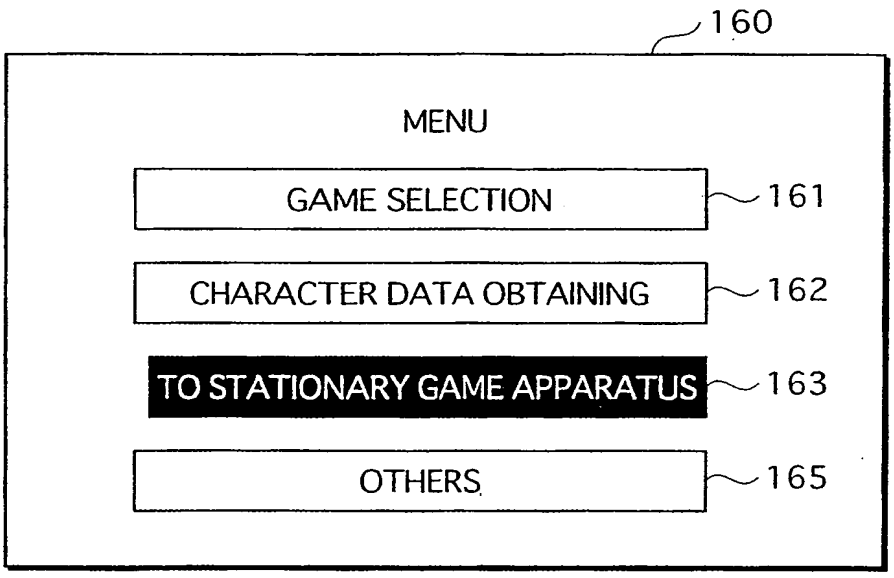

KIND OF INSTRUCTION
CHARACTER-OBJECT GENERATING INSTRUCTION
156
BACKGROUND-OBJECT GENERATING INSTRUCTION
157
ATTACK-OBJECT GENERATING INSTRUCTION
158
SCREEN DISPLAY INSTRUCTION
159

FIG.22


160
MENU
GAME SELECTION
161
CHARACTER DATA OBTAINING
162
TO STATIONARY GAME APPARATUS
163
OTHERS
165

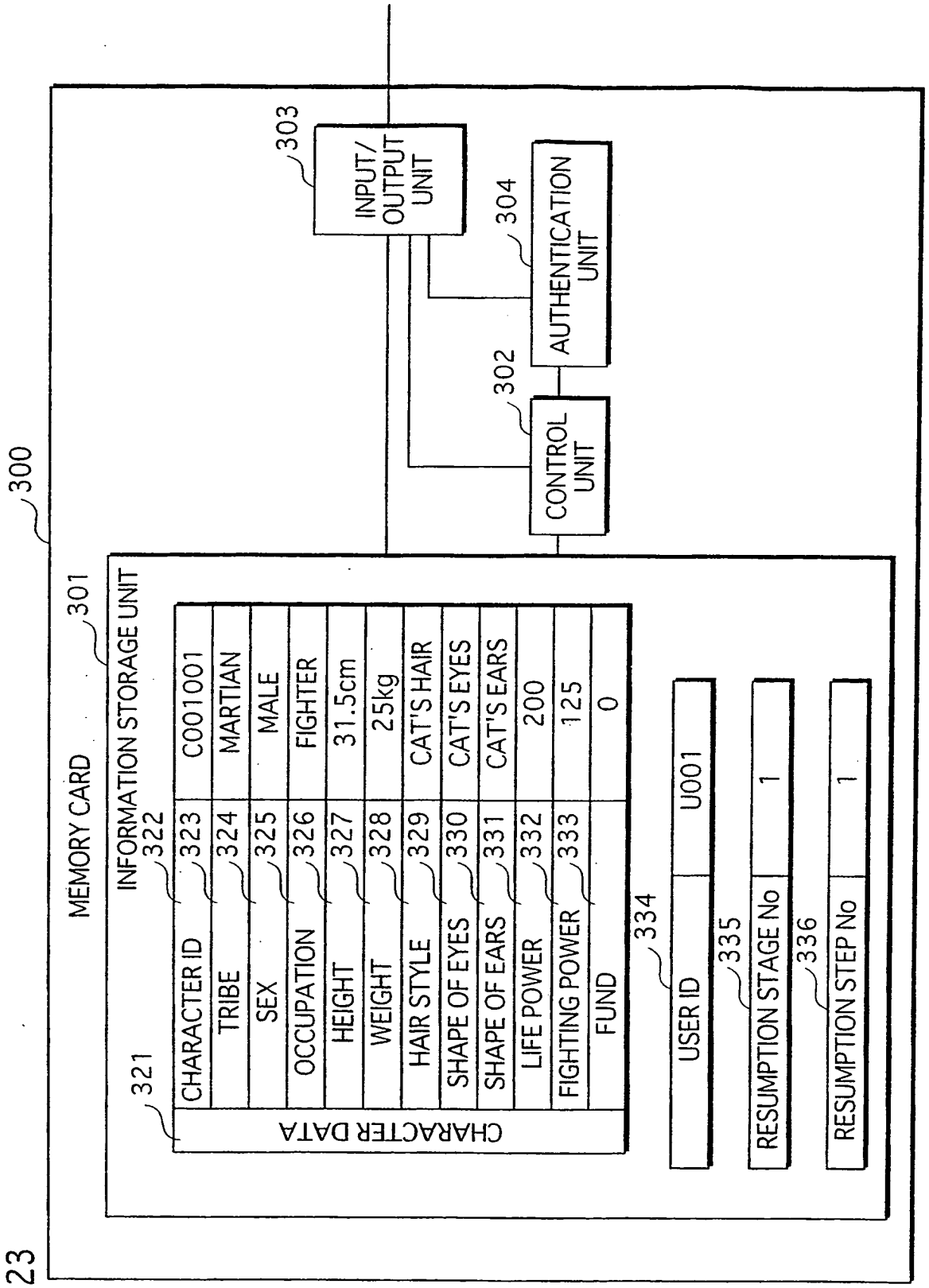

300
MEMORY CARD
301
INFORMATION STORAGE UNIT
303
INPUT/ OUTPUT UNIT
304
AUTHENTICATION UNIT
302
CONTROL UNIT
321
CHARACTER DATA
322
CHARACTER ID 323 C001001
TRIBE 324 MARTIAN
SEX 325 MALE
OCCUPATION 326 FIGHTER
HEIGHT 327 31.5cm
WEIGHT 328 25kg
HAIR STYLE 329 CAT'S HAIR
SHAPE OF EYES 330 CAT'S EYES
SHAPE OF EARS 331 CAT'S EARS
LIFE POWER 332 200
FIGHTING POWER 333 125
FUND 334 0
USER ID 335 U001
RESUMPTION STAGE No 336 1
RESUMPTION STEP No 1

FIG.23

FIG.24

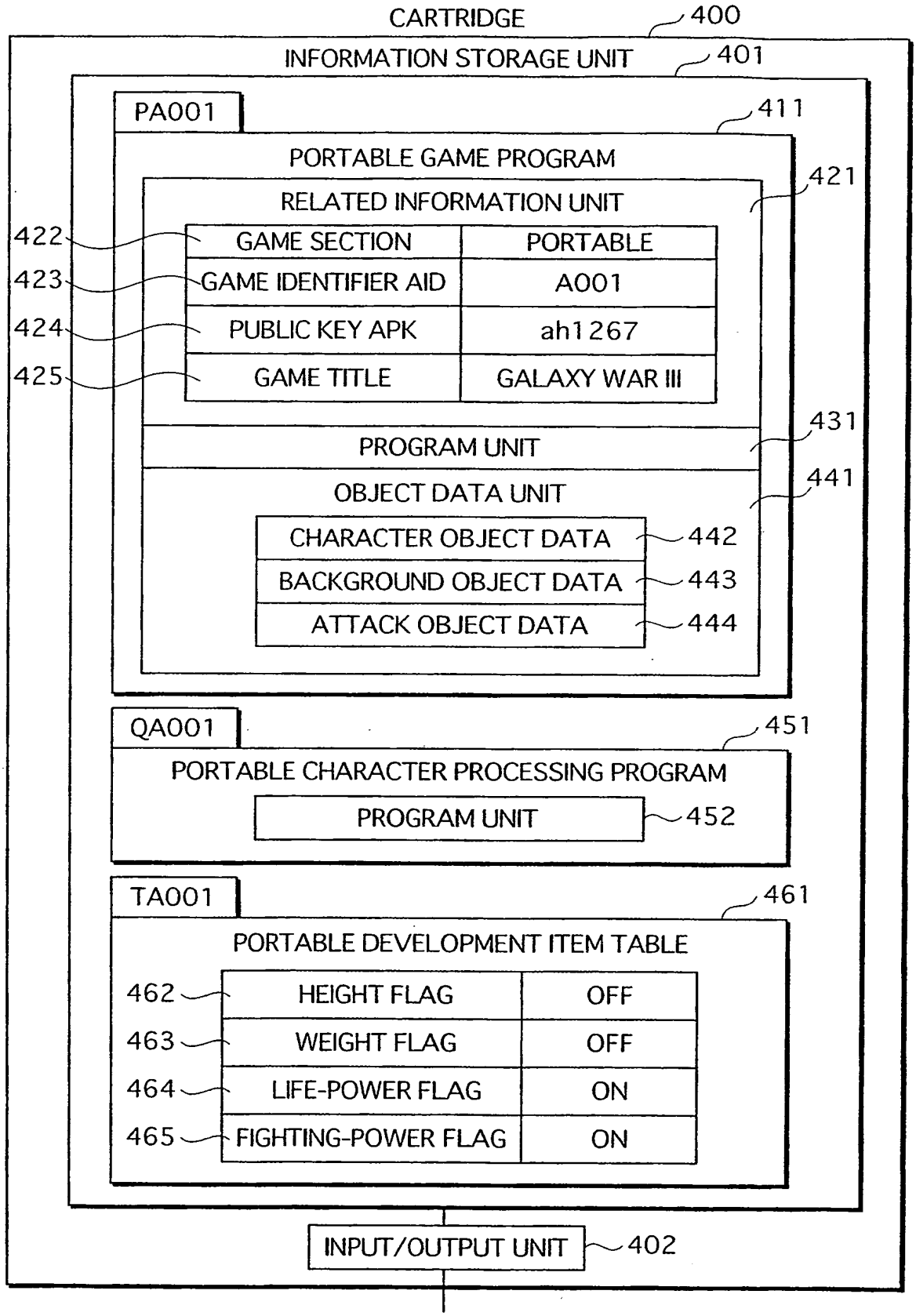

CARTRIDGE
400
INFORMATION STORAGE UNIT
401
PA001
411
PORTABLE GAME PROGRAM
421
RELATED INFORMATION UNIT
422
GAME SECTION
PORTABLE
423
GAME IDENTIFIER AID
A001
424
PUBLIC KEY APK
ah1267
425
GAME TITLE
GALAXY WAR III
431
PROGRAM UNIT
441
OBJECT DATA UNIT
CHARACTER OBJECT DATA
442
BACKGROUND OBJECT DATA
443
ATTACK OBJECT DATA
444
QA001
451
PORTABLE CHARACTER PROCESSING PROGRAM
PROGRAM UNIT
452
TA001
461
PORTABLE DEVELOPMENT ITEM TABLE
462
HEIGHT FLAG
OFF
463
WEIGHT FLAG
OFF
464
LIFE-POWER FLAG
ON
465
FIGHTING-POWER FLAG
ON
INPUT/OUTPUT UNIT
402

FIG.25

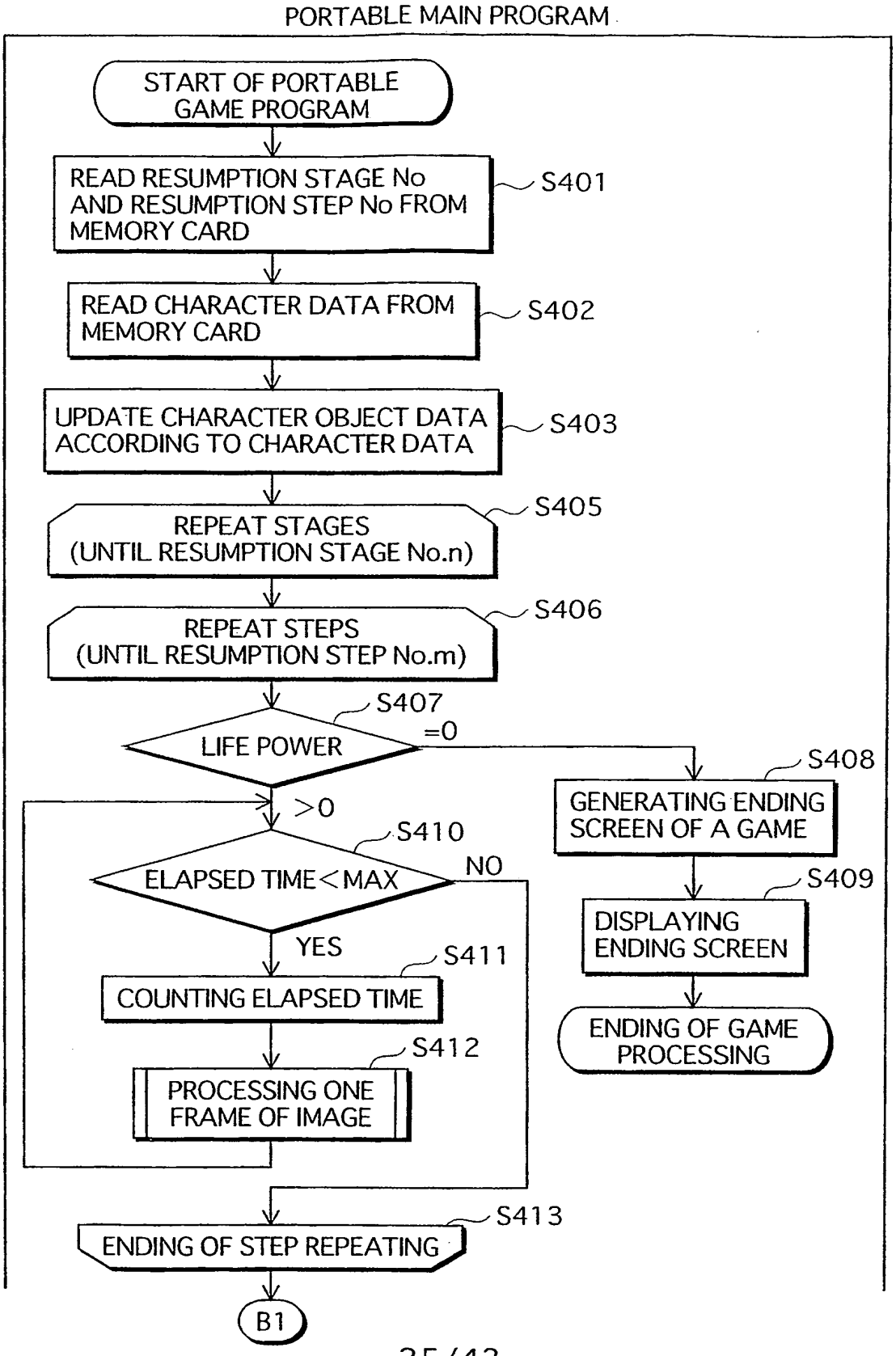

PORTABLE MAIN PROGRAM
START OF PORTABLE GAME PROGRAM
READ RESUMPTION STAGE No AND RESUMPTION STEP No FROM MEMORY CARD
S401
READ CHARACTER DATA FROM MEMORY CARD
S402
UPDATE CHARACTER OBJECT DATA ACCORDING TO CHARACTER DATA
S403
REPEAT STAGES (UNTIL RESUMPTION STAGE No.n)
S405
REPEAT STEPS (UNTIL RESUMPTION STEP No.m)
S406
S407
LIFE POWER
=0
>0
S408
GENERATING ENDING SCREEN OF A GAME
S409
DISPLAYING ENDING SCREEN
ENDING OF GAME PROCESSING
S410
ELAPSED TIME<MAX
NO
YES
S411
COUNTING ELAPSED TIME
S412
PROCESSING ONE FRAME OF IMAGE
S413
ENDING OF STEP REPEATING
B1

FIG.26

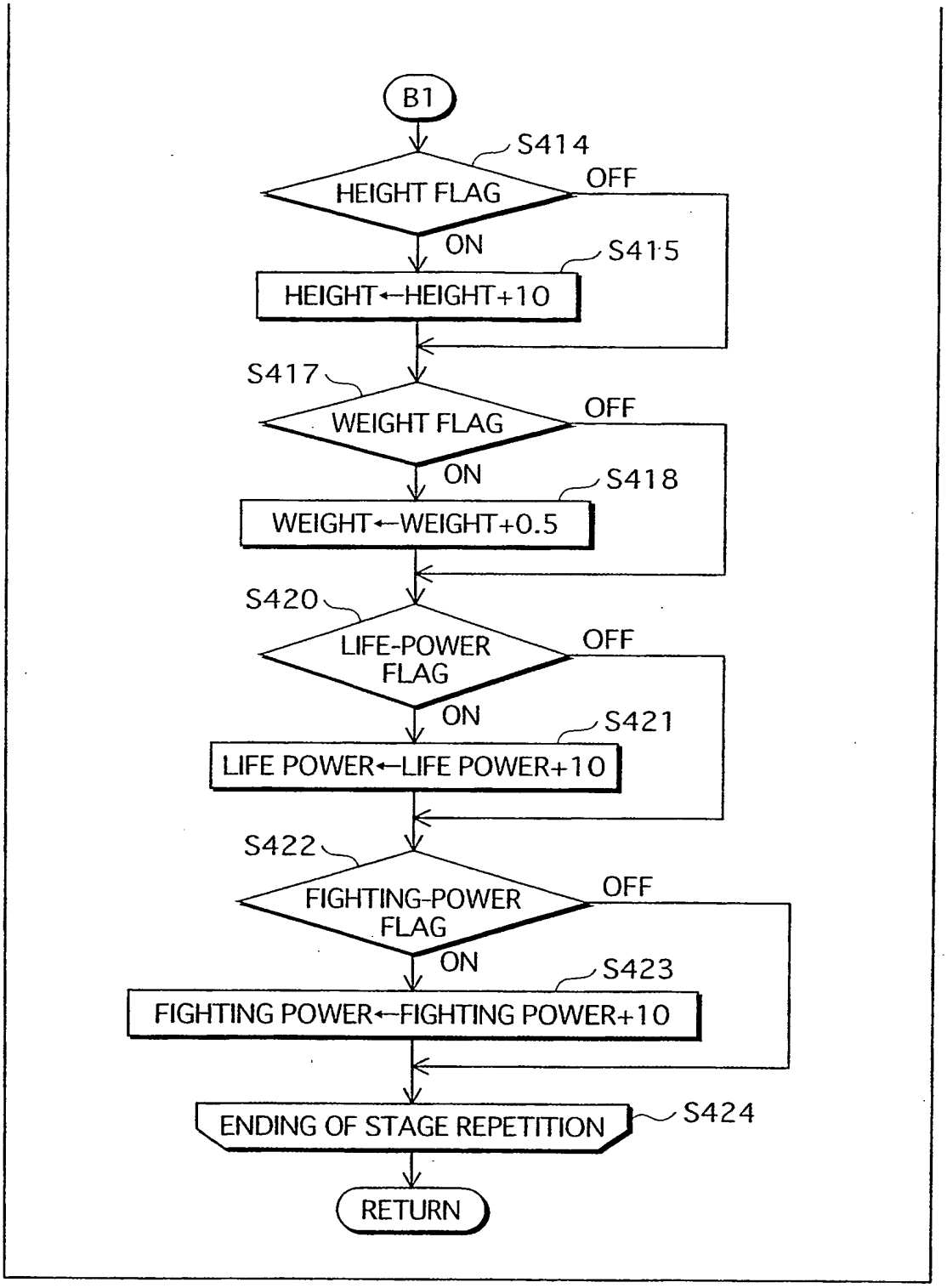

B1
S414
HEIGHT FLAG
OFF
ON
S415
HEIGHT←HEIGHT+10
S417
WEIGHT FLAG
OFF
ON
S418
WEIGHT←WEIGHT+0.5
S420
LIFE-POWER FLAG
OFF
ON
S421
LIFE POWER←LIFE POWER+10
S422
FIGHTING-POWER FLAG
OFF
ON
S423
FIGHTING POWER←FIGHTING POWER+10
ENDING OF STAGE REPETITION
S424
RETURN

FIG.27

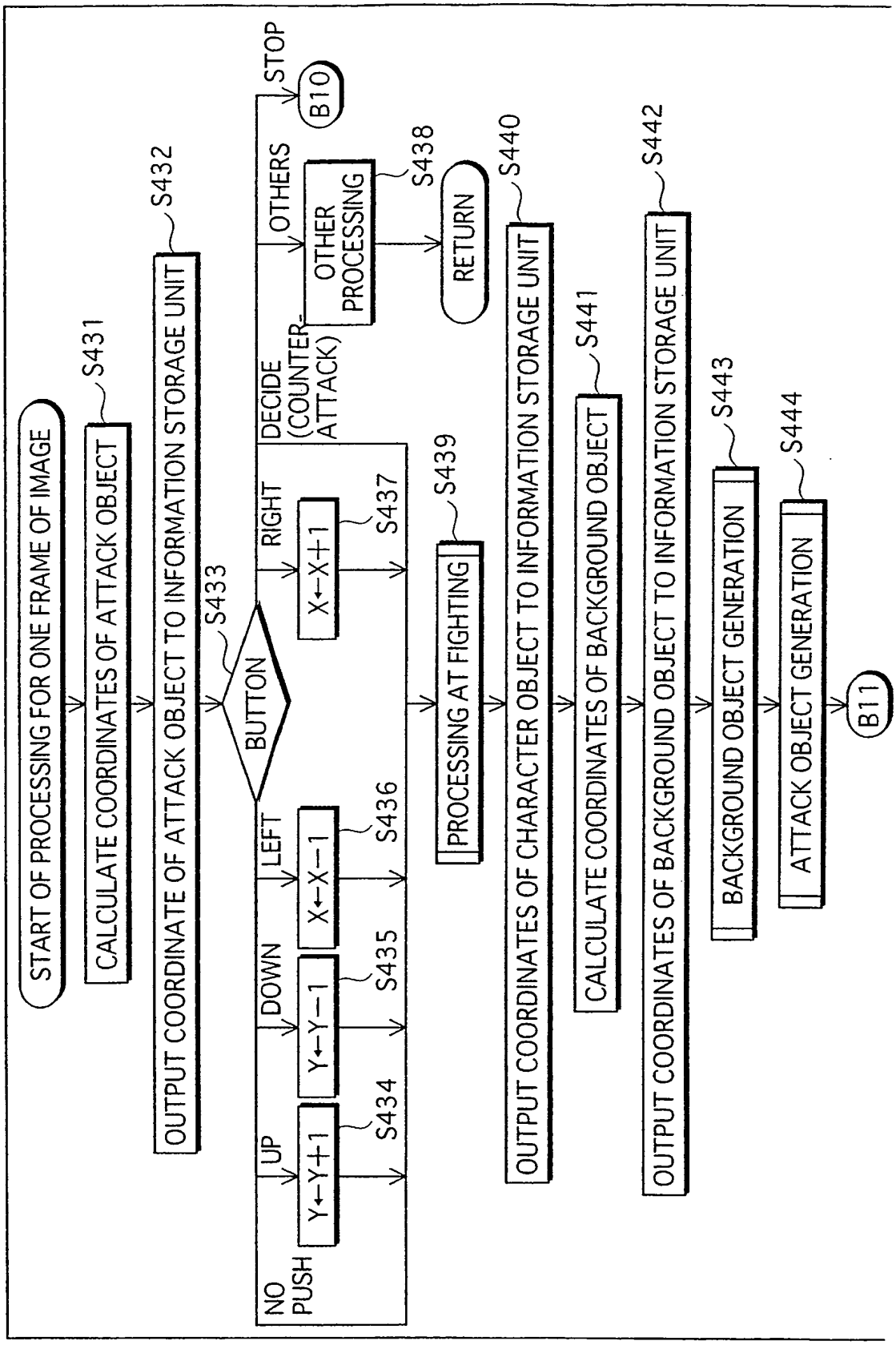

STATIONARY FRAME PROCESSING PROGRAM
START OF PROCESSING FOR ONE FRAME OF IMAGE
S431
CALCULATE COORDINATES OF ATTACK OBJECT
S432
OUTPUT COORDINATE OF ATTACK OBJECT TO INFORMATION STORAGE UNIT
S433
BUTTON
UP
Y←Y+1
S434
DOWN
Y←Y−1
S435
LEFT
X←X−1
S436
RIGHT
X←X+1
S437
NO PUSH
DECIDE (COUNTER-ATTACK)
OTHERS
OTHER PROCESSING
S438
STOP
B10
RETURN
S439
PROCESSING AT FIGHTING
S440
OUTPUT COORDINATES OF CHARACTER OBJECT TO INFORMATION STORAGE UNIT
S441
CALCULATE COORDINATES OF BACKGROUND OBJECT
S442
OUTPUT COORDINATES OF BACKGROUND OBJECT TO INFORMATION STORAGE UNIT
S443
BACKGROUND OBJECT GENERATION
S444
ATTACK OBJECT GENERATION
B11

FIG.28

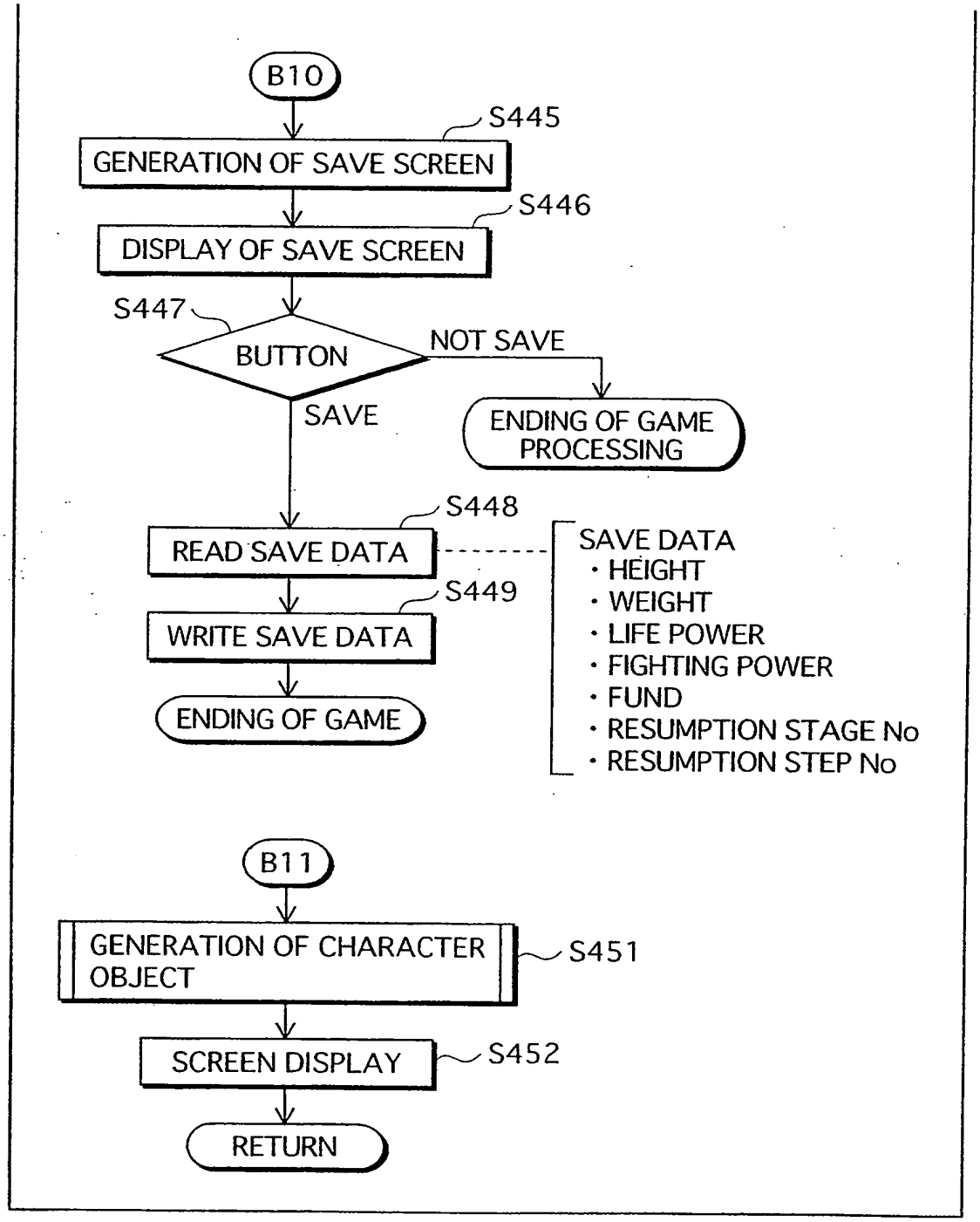
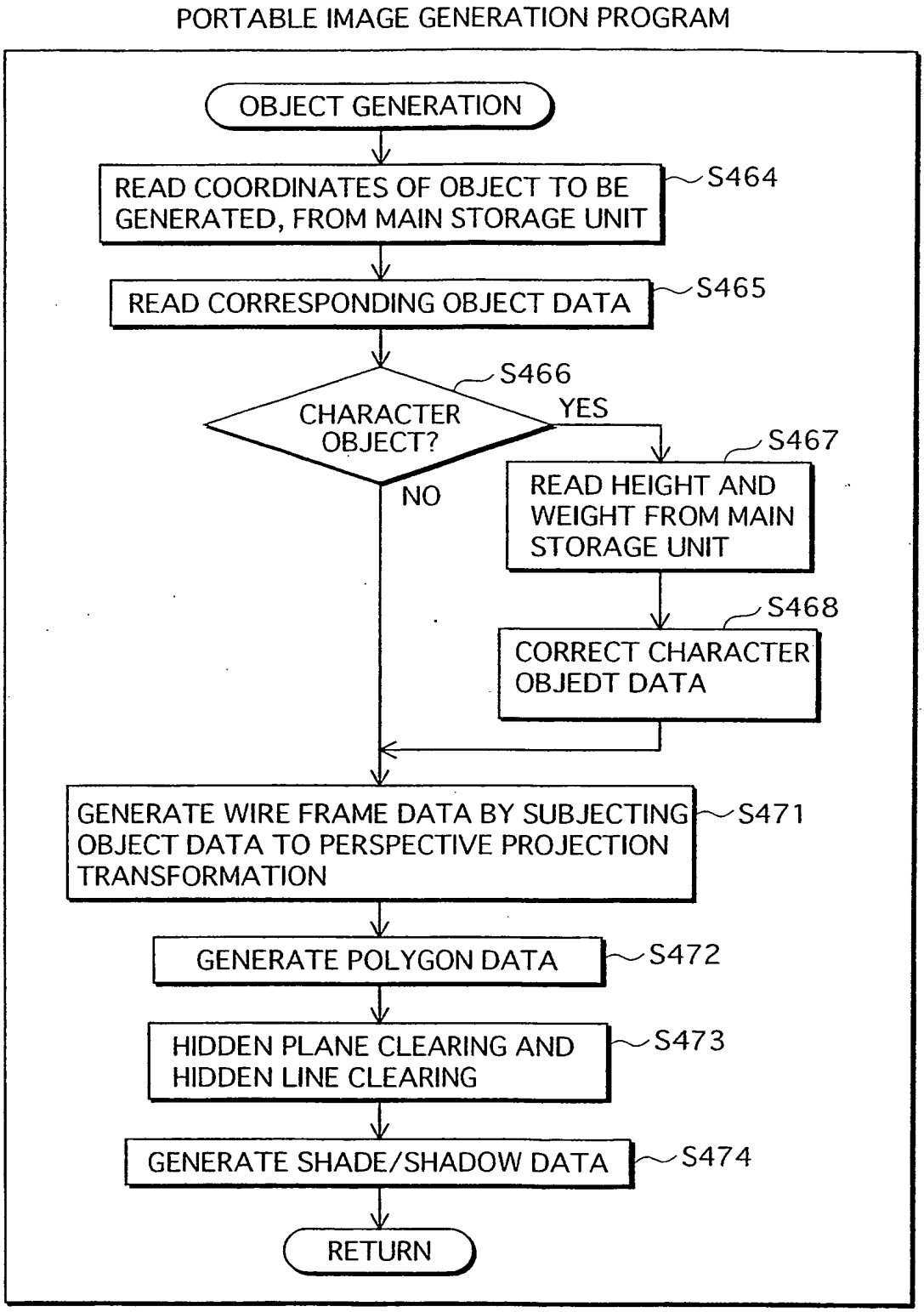

B10
S445
GENERATION OF SAVE SCREEN
S446
DISPLAY OF SAVE SCREEN
S447
BUTTON
NOT SAVE
SAVE
ENDING OF GAME PROCESSING
S448
READ SAVE DATA
S449
WRITE SAVE DATA
ENDING OF GAME
SAVE DATA
・HEIGHT
・WEIGHT
・LIFE POWER
・FIGHTING POWER
・FUND
・RESUMPTION STAGE No
・RESUMPTION STEP No
B11
GENERATION OF CHARACTER OBJECT
S451
SCREEN DISPLAY
S452
RETURN

FIG.29


PORTABLE IMAGE GENERATION PROGRAM
OBJECT GENERATION
READ COORDINATES OF OBJECT TO BE GENERATED, FROM MAIN STORAGE UNIT
S464
READ CORRESPONDING OBJECT DATA
S465
S466
CHARACTER OBJECT?
YES
NO
S467
READ HEIGHT AND WEIGHT FROM MAIN STORAGE UNIT
S468
CORRECT CHARACTER OBJEDT DATA
GENERATE WIRE FRAME DATA BY SUBJECTING OBJECT DATA TO PERSPECTIVE PROJECTION TRANSFORMATION
S471
GENERATE POLYGON DATA
S472
HIDDEN PLANE CLEARING AND HIDDEN LINE CLEARING
S473
GENERATE SHADE/SHADOW DATA
S474
RETURN

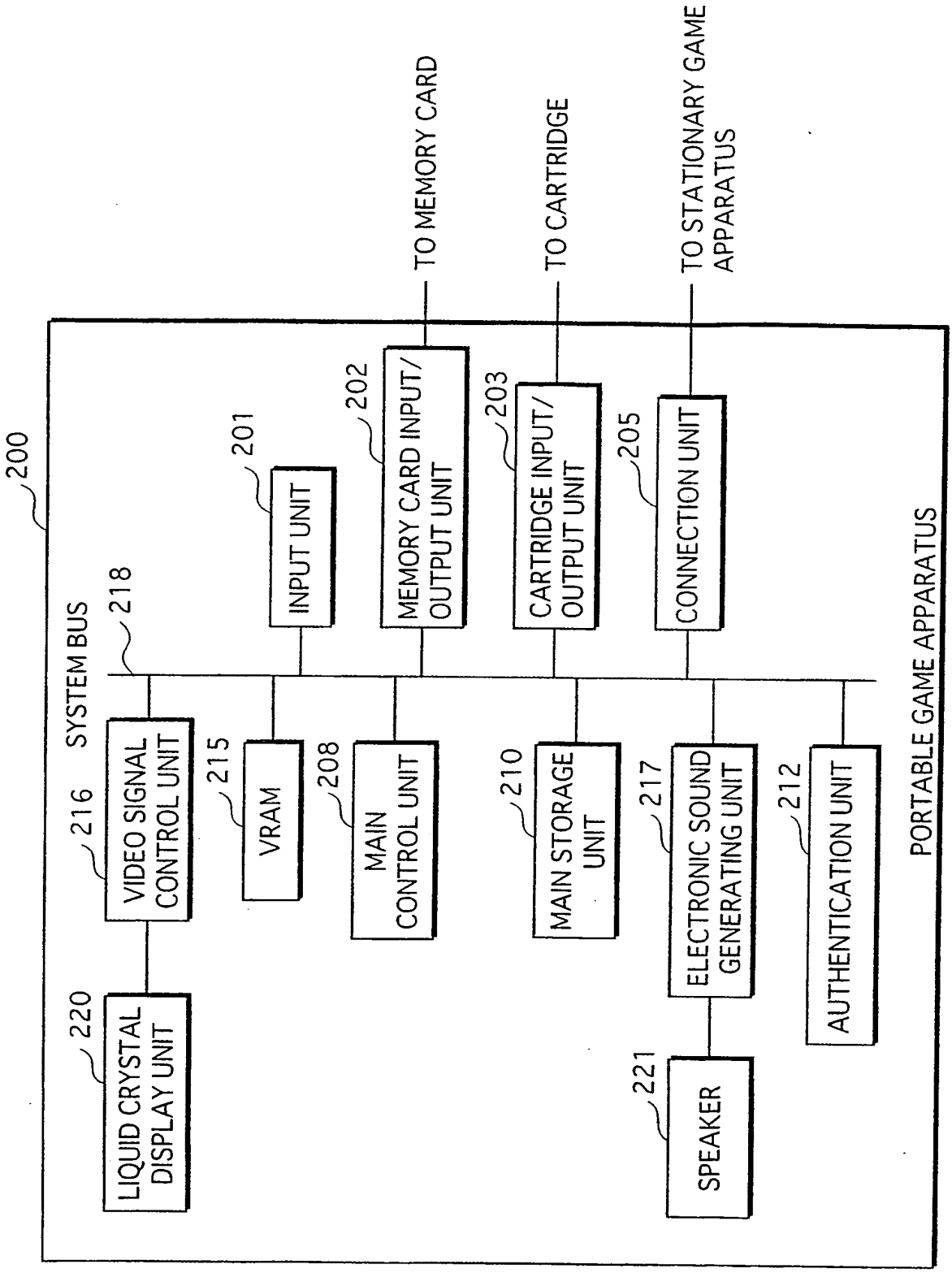

200
PORTABLE GAME APPARATUS
TO MEMORY CARD
TO CARTRIDGE
TO STATIONARY GAME APPARATUS
SYSTEM BUS
218
201
INPUT UNIT
202
MEMORY CARD INPUT/ OUTPUT UNIT
203
CARTRIDGE INPUT/ OUTPUT UNIT
205
CONNECTION UNIT
216
VIDEO SIGNAL CONTROL UNIT
215
VRAM
208
MAIN CONTROL UNIT
210
MAIN STORAGE UNIT
217
ELECTRONIC SOUND GENERATING UNIT
212
AUTHENTICATION UNIT
220
LIQUID CRYSTAL DISPLAY UNIT
221
SPEAKER

FIG.30

FIG.31

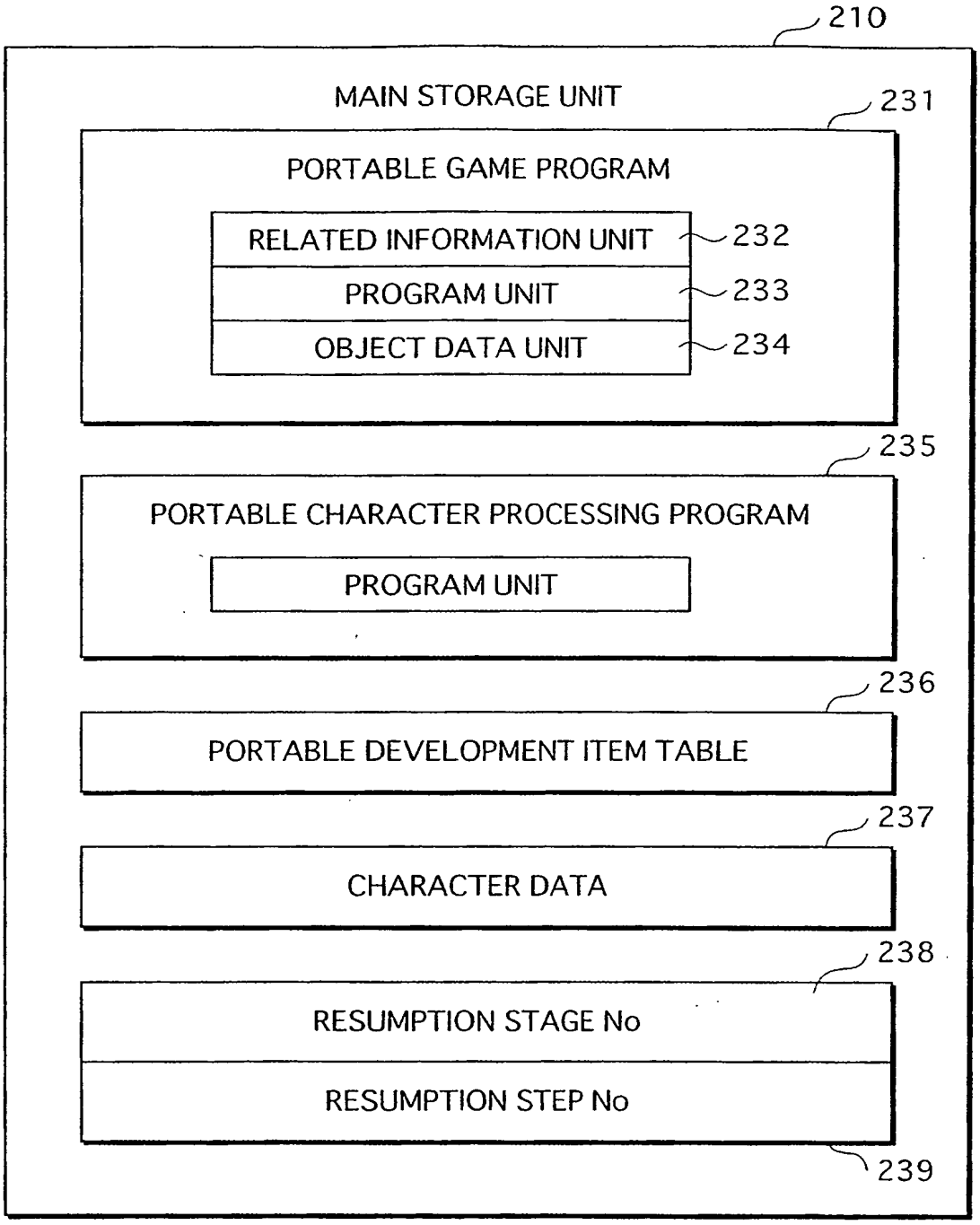
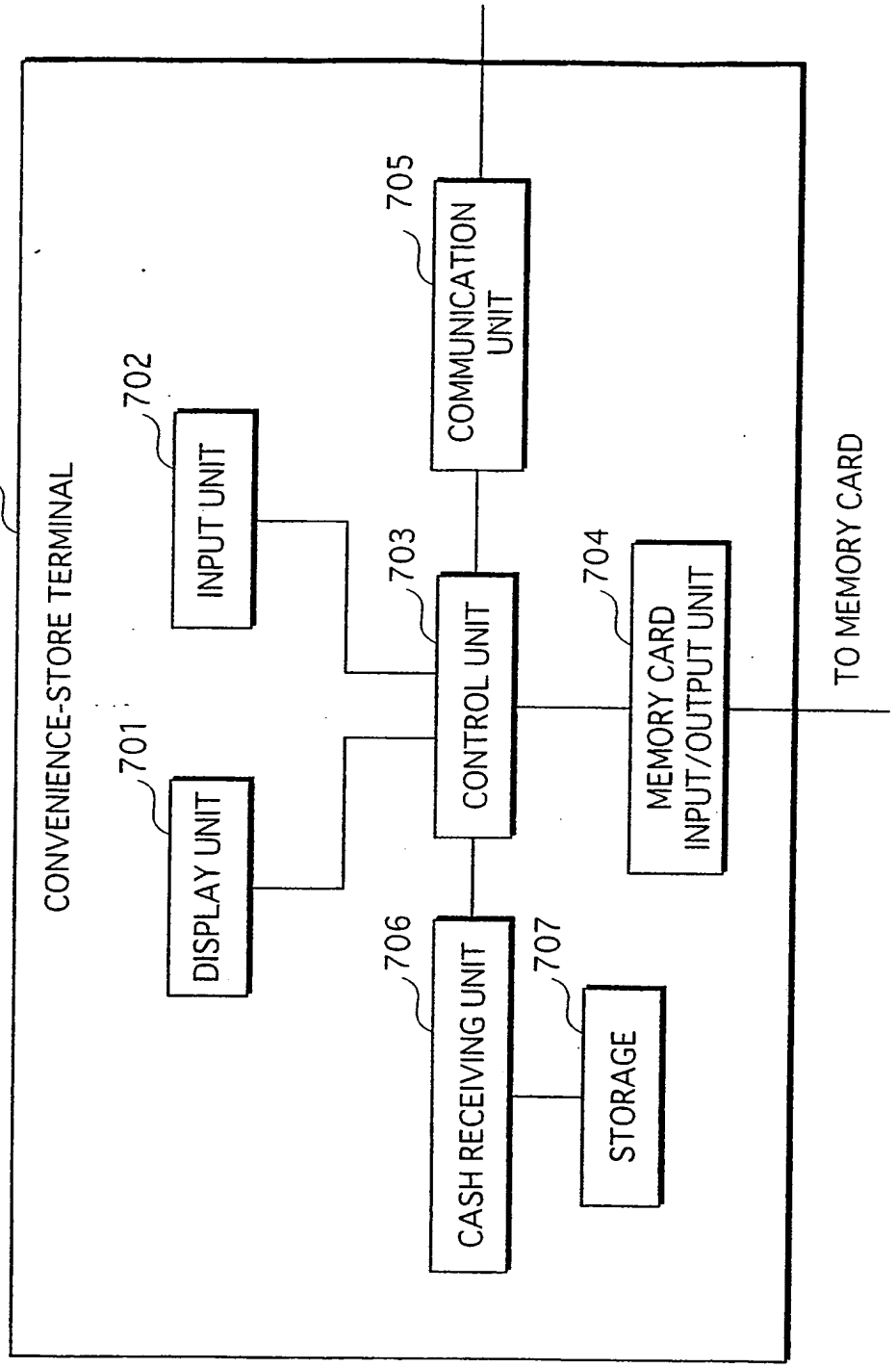

210
MAIN STORAGE UNIT
231
PORTABLE GAME PROGRAM
RELATED INFORMATION UNIT
232
PROGRAM UNIT
233
OBJECT DATA UNIT
234
235
PORTABLE CHARACTER PROCESSING PROGRAM
PROGRAM UNIT
236
PORTABLE DEVELOPMENT ITEM TABLE
237
CHARACTER DATA
238
RESUMPTION STAGE No
RESUMPTION STEP No
239

FIG.32


700
CONVENIENCE-STORE TERMINAL
701
DISPLAY UNIT
702
INPUT UNIT
703
CONTROL UNIT
704
MEMORY CARD INPUT/OUTPUT UNIT
705
COMMUNICATION UNIT
706
CASH RECEIVING UNIT
707
STORAGE
TO MEMORY CARD

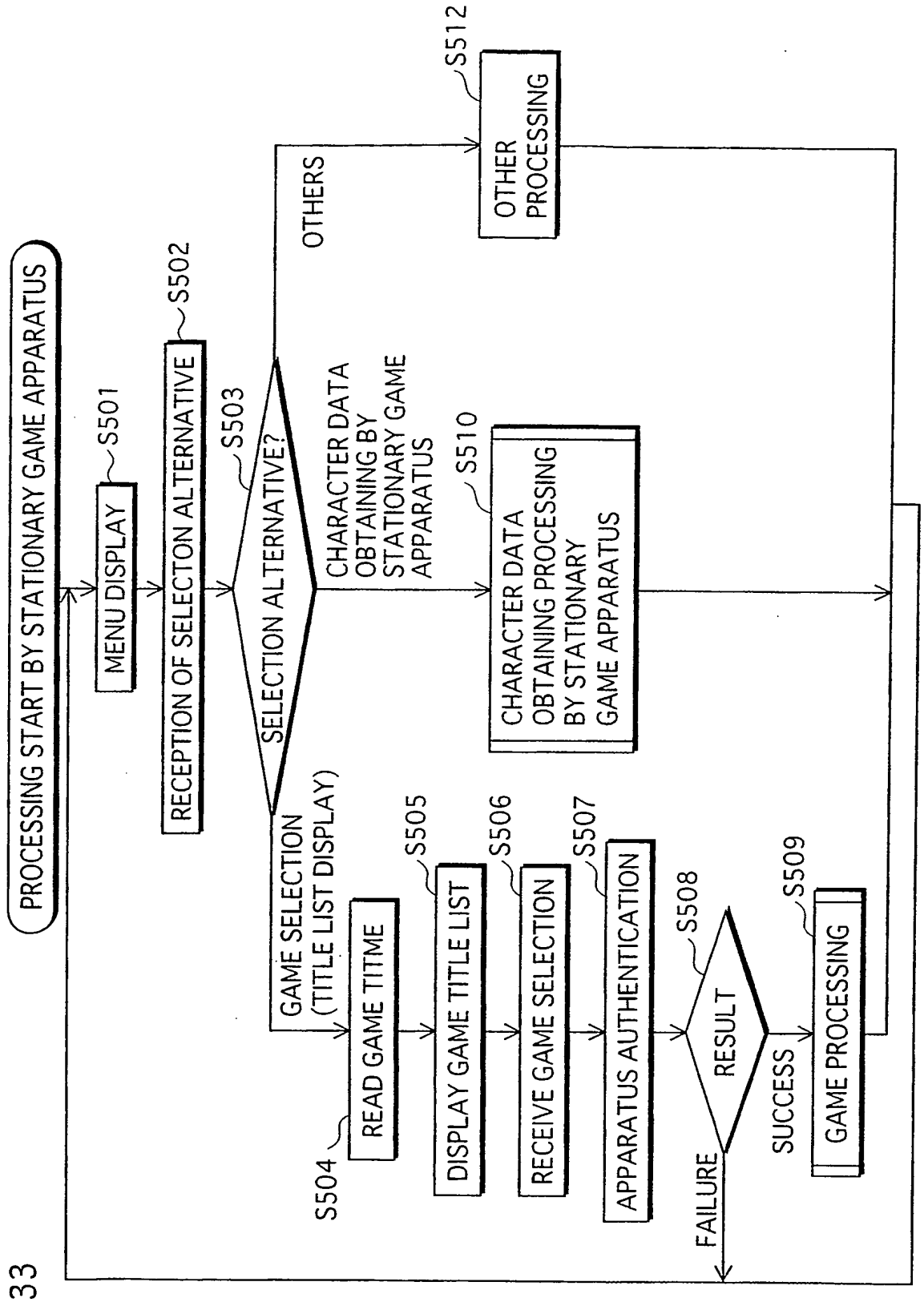

PROCESSING START BY STATIONARY GAME APPARATUS
S501
MENU DISPLAY
S502
RECEPTION OF SELECTON ALTERNATIVE
S503
SELECTION ALTERNATIVE?
OTHERS
S512
OTHER PROCESSING
CHARACTER DATA OBTAINING BY STATIONARY GAME APPARATUS
S510
CHARACTER DATA OBTAINING PROCESSING BY STATIONARY GAME APPARATUS
GAME SELECTION (TITLE LIST DISPLAY)
S504
READ GAME TITME
S505
DISPLAY GAME TITLE LIST
S506
RECEIVE GAME SELECTION
S507
APPARATUS AUTHENTICATION
S508
RESULT
FAILURE
SUCCESS
S509
GAME PROCESSING

FIG.33

FIG.34

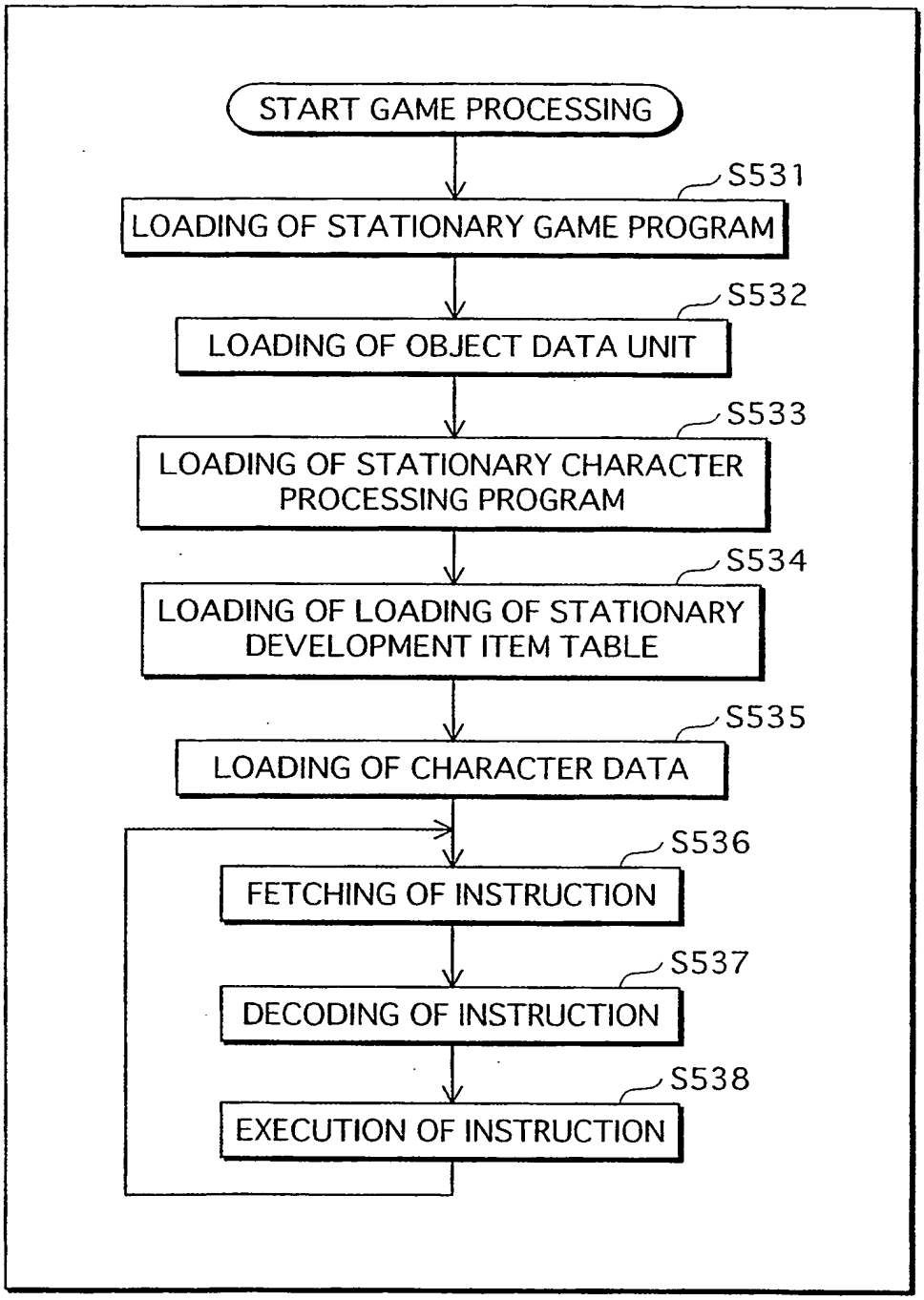
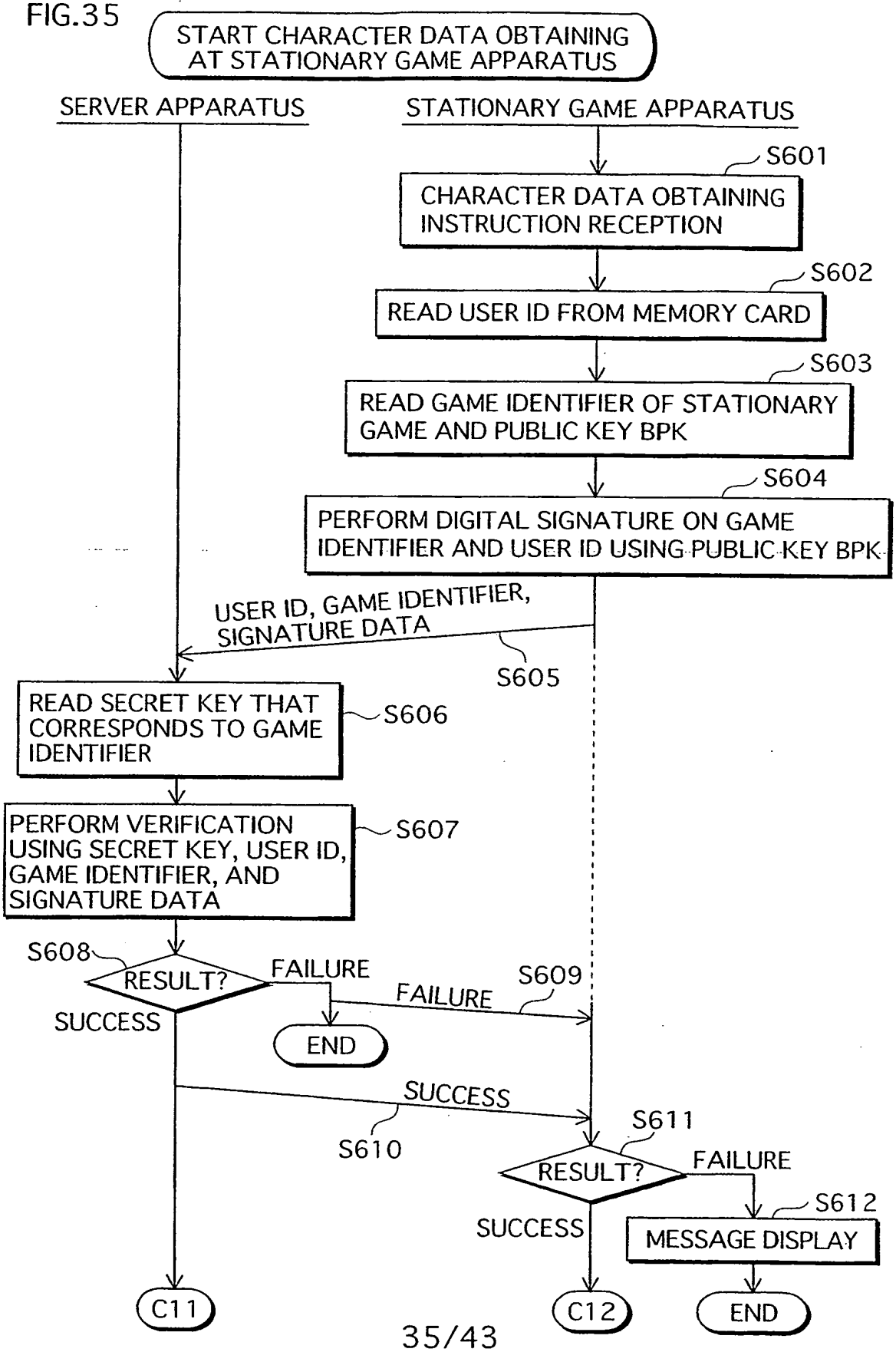

START GAME PROCESSING
S531
LOADING OF STATIONARY GAME PROGRAM
S532
LOADING OF OBJECT DATA UNIT
S533
LOADING OF STATIONARY CHARACTER PROCESSING PROGRAM
S534
LOADING OF LOADING OF STATIONARY DEVELOPMENT ITEM TABLE
S535
LOADING OF CHARACTER DATA
S536
FETCHING OF INSTRUCTION
S537
DECODING OF INSTRUCTION
S538
EXECUTION OF INSTRUCTION

FIG.35


START CHARACTER DATA OBTAINING AT STATIONARY GAME APPARATUS
SERVER APPARATUS
STATIONARY GAME APPARATUS
S601
CHARACTER DATA OBTAINING INSTRUCTION RECEPTION
S602
READ USER ID FROM MEMORY CARD
S603
READ GAME IDENTIFIER OF STATIONARY GAME AND PUBLIC KEY BPK
S604
PERFORM DIGITAL SIGNATURE ON GAME IDENTIFIER AND USER ID USING PUBLIC KEY BPK
USER ID, GAME IDENTIFIER, SIGNATURE DATA
S605
READ SECRET KEY THAT CORRESPONDS TO GAME IDENTIFIER
S606
PERFORM VERIFICATION USING SECRET KEY, USER ID, GAME IDENTIFIER, AND SIGNATURE DATA
S607
S608
RESULT?
FAILURE
FAILURE
S609
SUCCESS
END
SUCCESS
S610
S611
RESULT?
FAILURE
SUCCESS
S612
MESSAGE DISPLAY
C11
C12
END

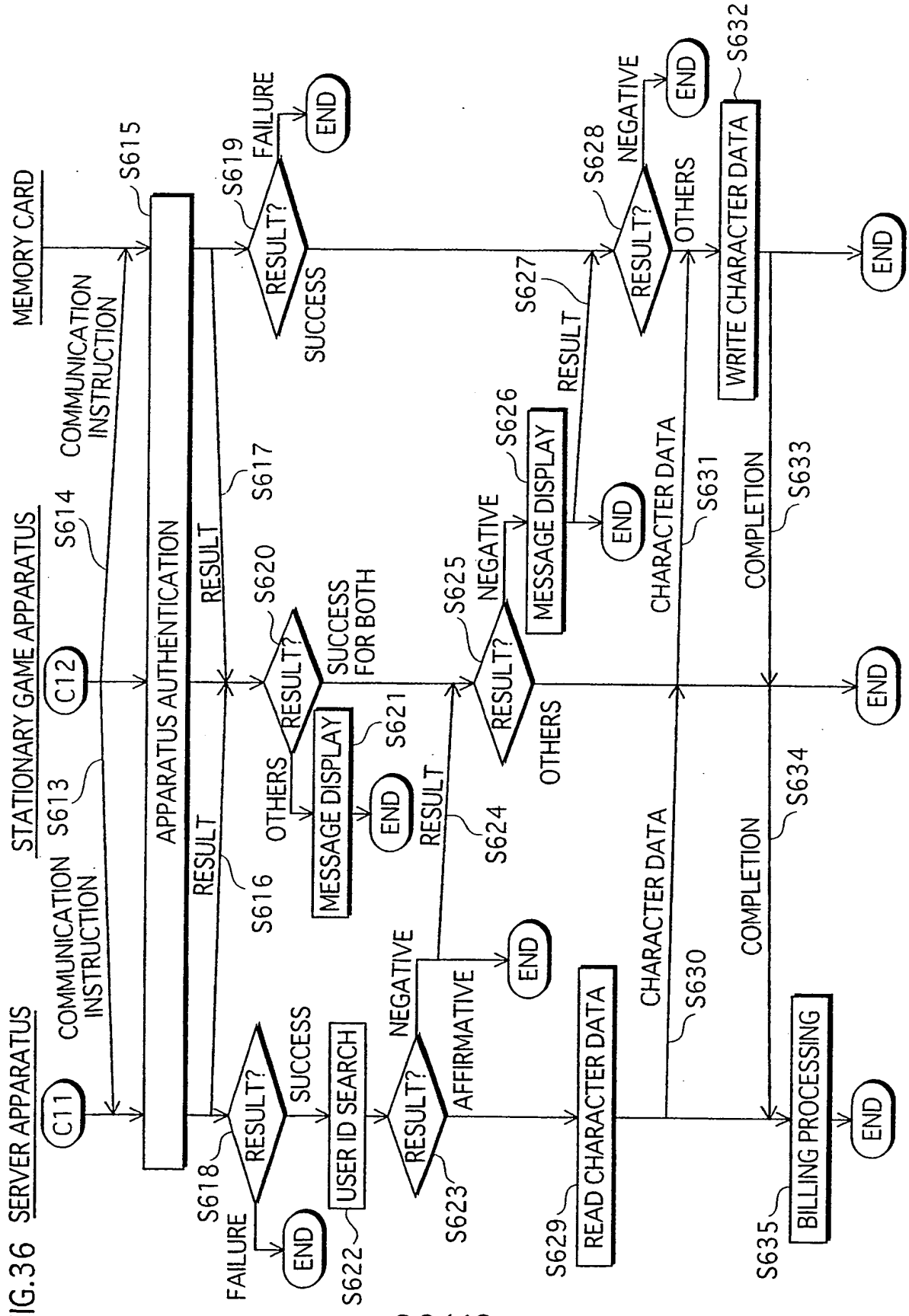

SERVER APPARATUS
STATIONARY GAME APPARATUS
MEMORY CARD
C11
C12
COMMUNICATION INSTRUCTION
S613
S614
S615
APPARATUS AUTHENTICATION
RESULT
S616
RESULT?
FAILURE
END
S618
SUCCESS
USER ID SEARCH
S622
NEGATIVE
RESULT?
S623
AFFIRMATIVE
END
S617
RESULT
S619
RESULT?
FAILURE
END
SUCCESS
S620
RESULT?
SUCCESS FOR BOTH
OTHERS
MESSAGE DISPLAY
S621
END
S624
RESULT
S625
NEGATIVE
RESULT?
OTHERS
MESSAGE DISPLAY
S626
RESULT
S627
S628
NEGATIVE
RESULT?
END
OTHERS
CHARACTER DATA
S629
READ CHARACTER DATA
S630
CHARACTER DATA
S631
WRITE CHARACTER DATA
S632
COMPLETION
S633
COMPLETION
S634
S635
BILLING PROCESSING
END
END
END

FIG.36

FIG.37

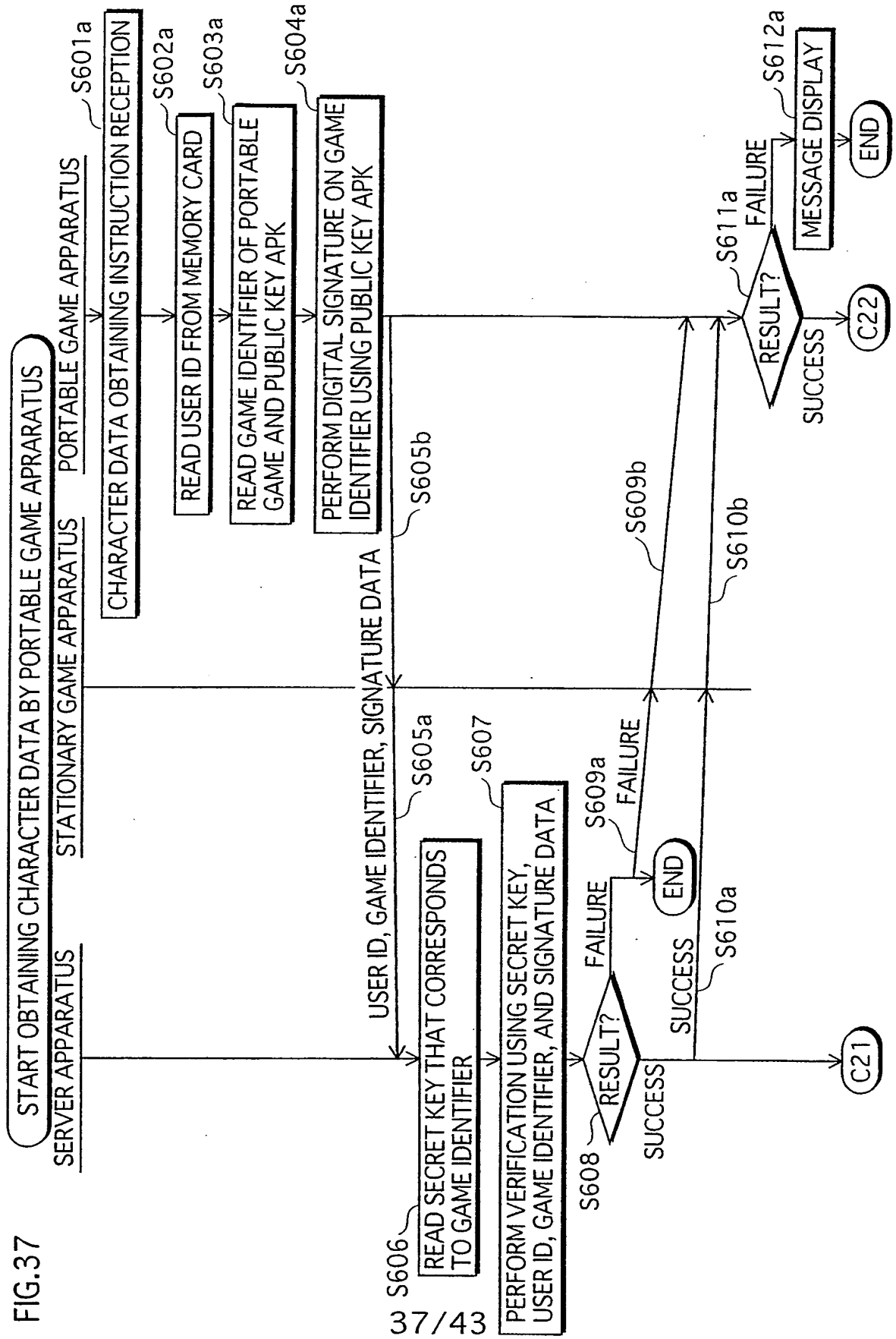

START OBTAINING CHARACTER DATA BY PORTABLE GAME APRARATUS
SERVER APPARATUS
STATIONARY GAME APPARATUS
PORTABLE GAME APPARATUS
S601a
CHARACTER DATA OBTAINING INSTRUCTION RECEPTION
S602a
READ USER ID FROM MEMORY CARD
S603a
READ GAME IDENTIFIER OF PORTABLE GAME AND PUBLIC KEY APK
S604a
PERFORM DIGITAL SIGNATURE ON GAME IDENTIFIER USING PUBLIC KEY APK
S605b
USER ID, GAME IDENTIFIER, SIGNATURE DATA
S605a
S606
READ SECRET KEY THAT CORRESPONDS TO GAME IDENTIFIER
S607
PERFORM VERIFICATION USING SECRET KEY, USER ID, GAME IDENTIFIER, AND SIGNATURE DATA
S608
RESULT?
FAILURE
S609a
END
SUCCESS
S610a
C21
S609b
S610b
S611a
RESULT?
FAILURE
S612a
MESSAGE DISPLAY
END
SUCCESS
C22

FIG.38

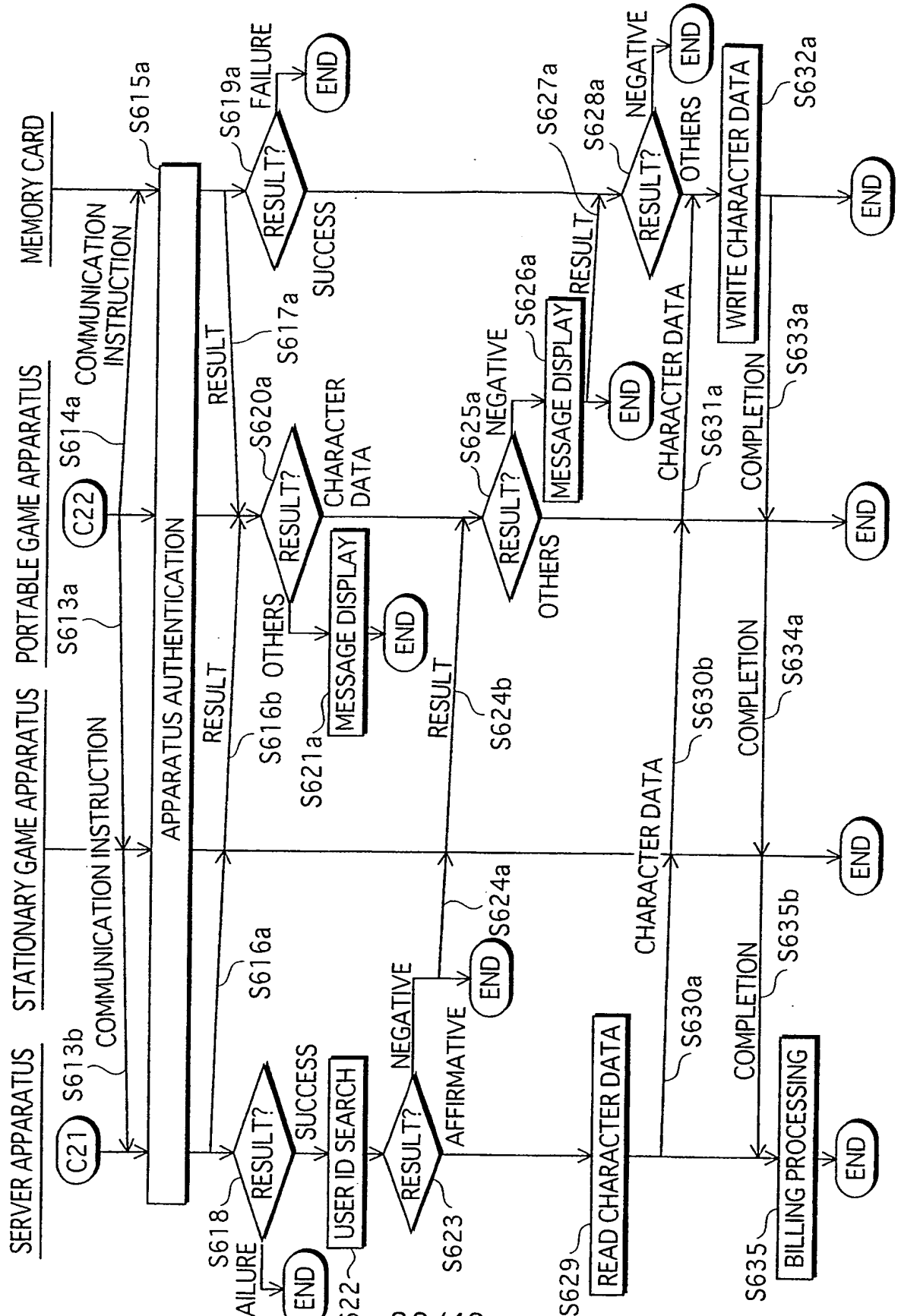

SERVER APPARATUS
STATIONARY GAME APPARATUS
PORTABLE GAME APPARATUS
MEMORY CARD
C21
C22
S613b
COMMUNICATION INSTRUCTION
S613a
COMMUNICATION INSTRUCTION
S614a
APPARATUS AUTHENTICATION
S615a
RESULT
S616a
RESULT
S616b
RESULT?
SUCCESS
FAILURE
S618
END
USER ID SEARCH
S622
MESSAGE DISPLAY
S621a
END
RESULT?
NEGATIVE
AFFIRMATIVE
S623
END
S624a
RESULT
S624b
RESULT?
OTHERS
CHARACTER DATA
S620a
RESULT
S617a
RESULT?
SUCCESS
FAILURE
S619a
END
RESULT?
NEGATIVE
S625a
MESSAGE DISPLAY
S626a
END
RESULT
S627a
RESULT?
OTHERS
S628a
CHARACTER DATA
S631a
END
WRITE CHARACTER DATA
S632a
COMPLETION
S633a
END
CHARACTER DATA
S630b
READ CHARACTER DATA
S629
S630a
COMPLETION
S634a
END
COMPLETION
S635b
BILLING PROCESSING
S635
END

FIG.39

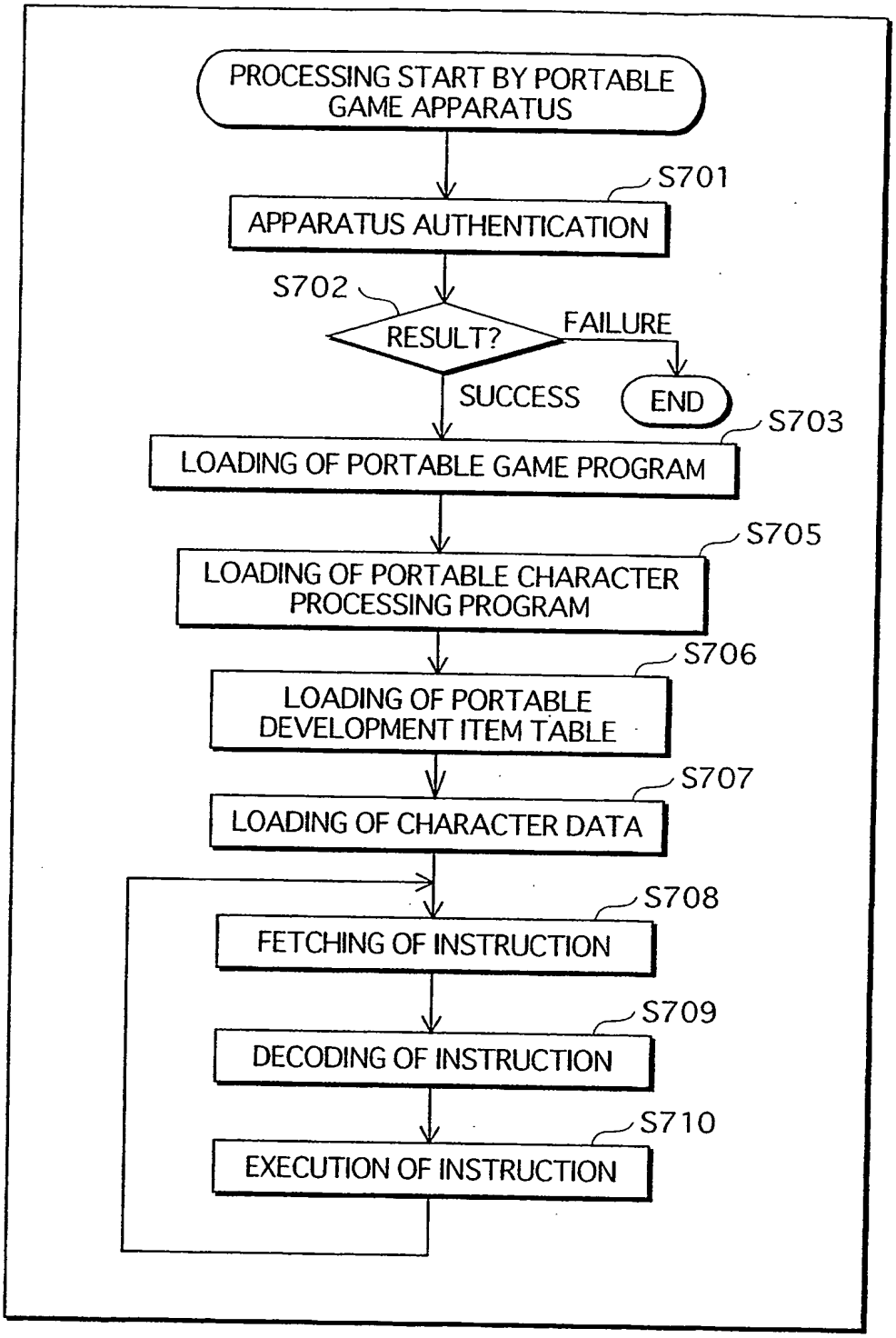

PROCESSING START BY PORTABLE GAME APPARATUS
S701
APPARATUS AUTHENTICATION
S702
RESULT?
FAILURE
END
SUCCESS
S703
LOADING OF PORTABLE GAME PROGRAM
S705
LOADING OF PORTABLE CHARACTER PROCESSING PROGRAM
S706
LOADING OF PORTABLE DEVELOPMENT ITEM TABLE
S707
LOADING OF CHARACTER DATA
S708
FETCHING OF INSTRUCTION
S709
DECODING OF INSTRUCTION
S710
EXECUTION OF INSTRUCTION

FIG.40

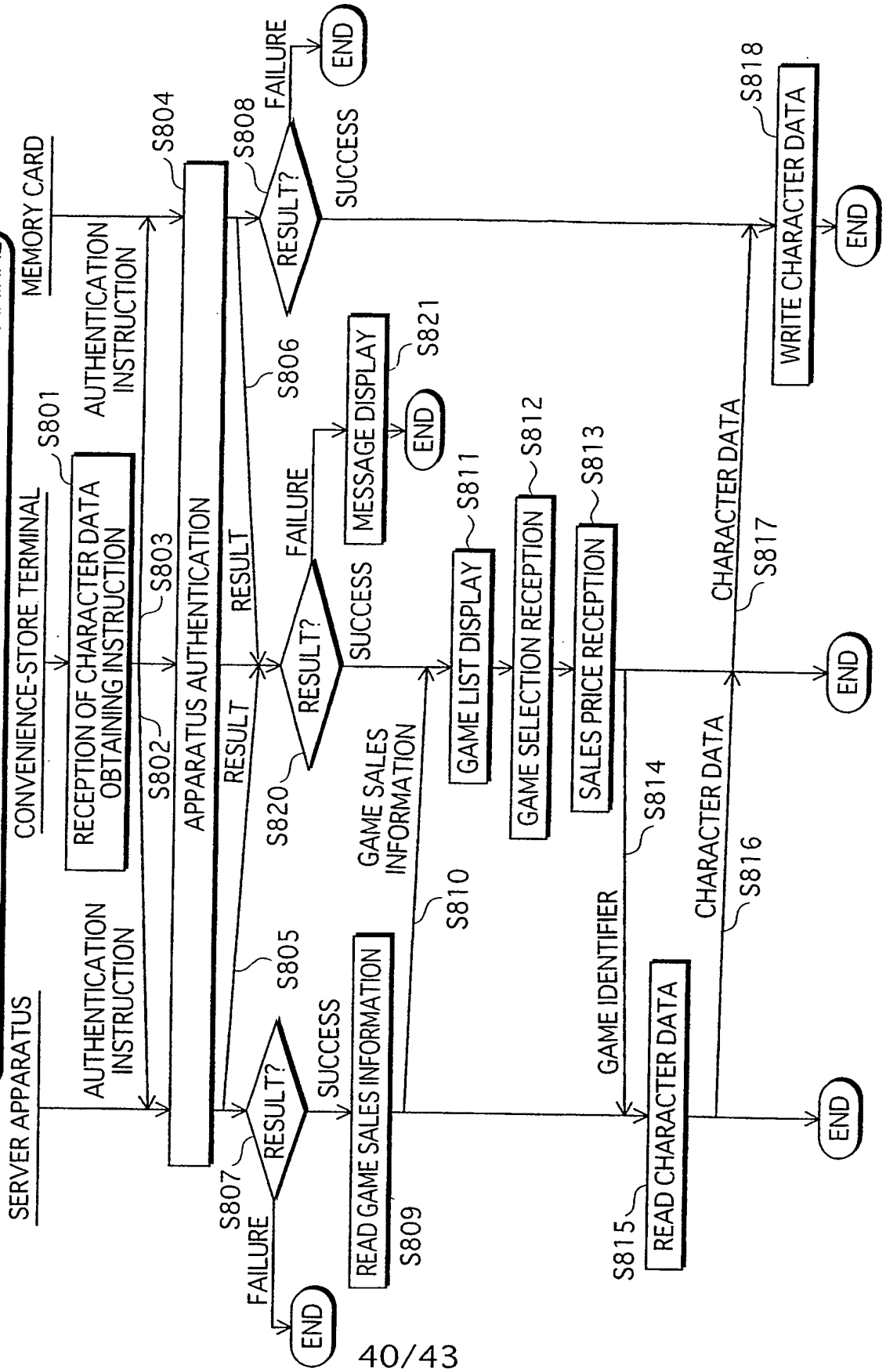

OBTAINING START OF CHARACTER DATA BY CONVENIENCE-STORE TERMINAL
SERVER APPARATUS
CONVENIENCE-STORE TERMINAL
MEMORY CARD
AUTHENTICATION INSTRUCTION
RECEPTION OF CHARACTER DATA OBTAINING INSTRUCTION
S801
AUTHENTICATION INSTRUCTION
S802
S803
APPARATUS AUTHENTICATION
S804
RESULT
RESULT?
S805
S806
FAILURE
SUCCESS
S807
S808
FAILURE
SUCCESS
END
END
READ GAME SALES INFORMATION
S809
GAME SALES INFORMATION
S810
GAME LIST DISPLAY
S811
GAME SELECTION RECEPTION
S812
SALES PRICE RECEPTION
S813
GAME IDENTIFIER
S814
READ CHARACTER DATA
S815
CHARACTER DATA
S816
CHARACTER DATA
S817
WRITE CHARACTER DATA
S818
END
END
RESULT?
S820
FAILURE
SUCCESS
MESSAGE DISPLAY
S821
END

FIG.41

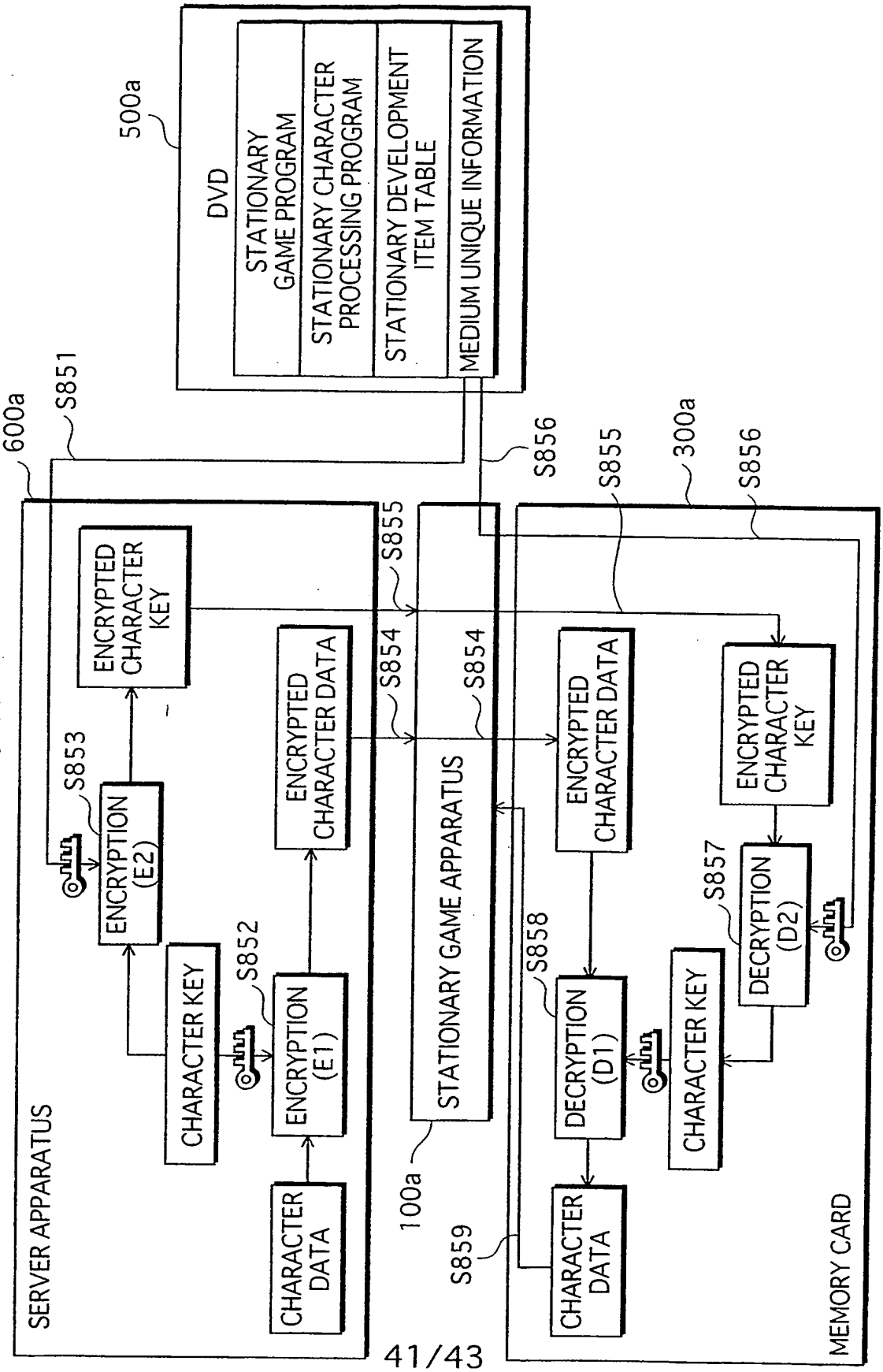

500a
DVD
STATIONARY GAME PROGRAM
STATIONARY CHARACTER PROCESSING PROGRAM
STATIONARY DEVELOPMENT ITEM TABLE
MEDIUM UNIQUE INFORMATION
S851
600a
S856
S855
300a
S856
SERVER APPARATUS
ENCRYPTED CHARACTER KEY
S855
S853
ENCRYPTION (E2)
ENCRYPTED CHARACTER DATA
S854
S854
ENCRYPTED CHARACTER DATA
ENCRYPTED CHARACTER KEY
CHARACTER KEY
S852
ENCRYPTION (E1)
STATIONARY GAME APPARATUS
S858
DECRYPTION (D1)
S857
DECRYPTION (D2)
CHARACTER KEY
CHARACTER DATA
100a
S859
CHARACTER DATA
MEMORY CARD

FIG.42

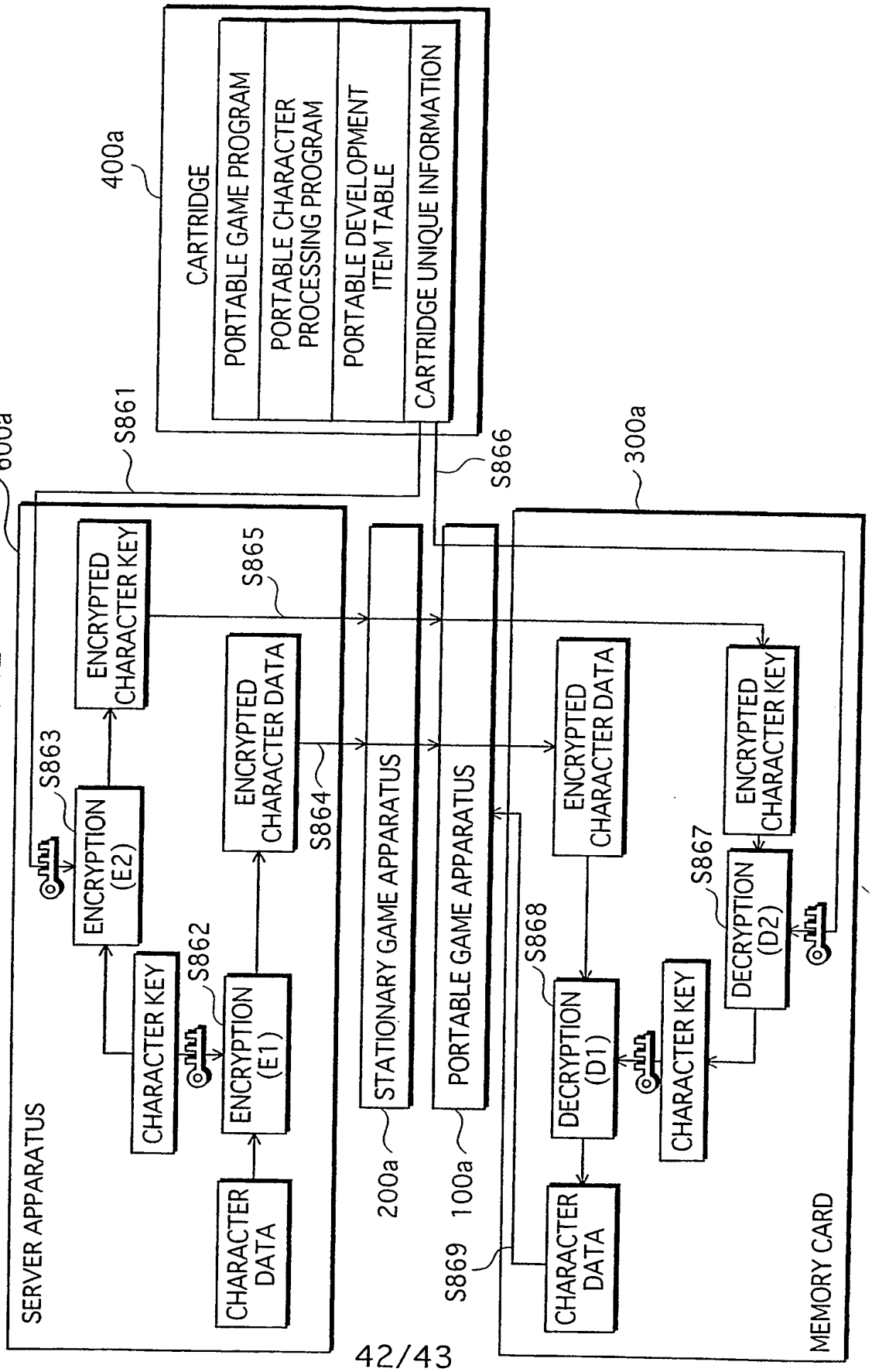
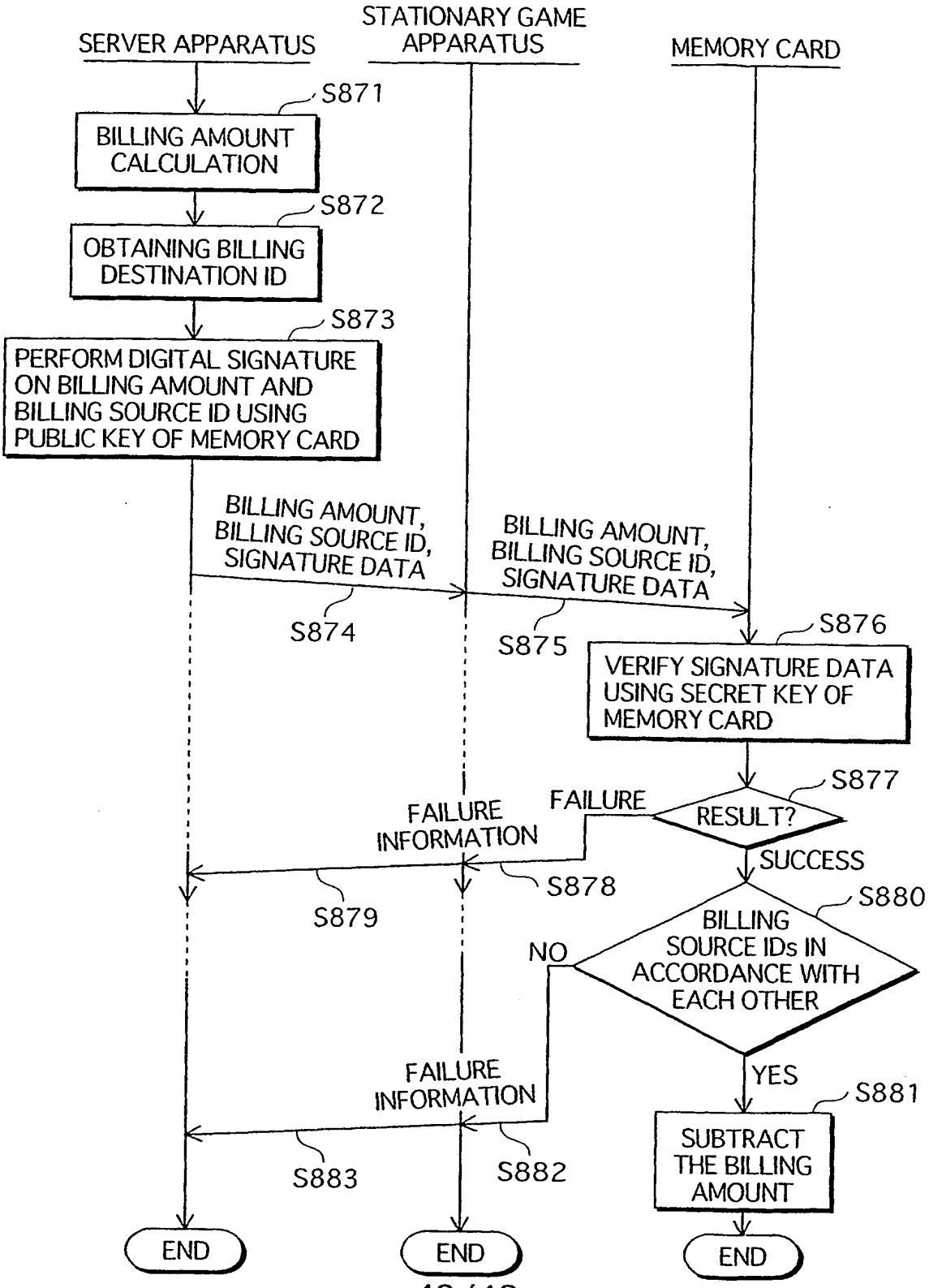

400a
CARTRIDGE
PORTABLE GAME PROGRAM
PORTABLE CHARACTER PROCESSING PROGRAM
PORTABLE DEVELOPMENT ITEM TABLE
CARTRIDGE UNIQUE INFORMATION
S861
S866
600a
300a
SERVER APPARATUS
ENCRYPTED CHARACTER KEY
S865
ENCRYPTED CHARACTER DATA
S863
ENCRYPTION (E2)
S864
CHARACTER KEY
S862
ENCRYPTION (E1)
CHARACTER DATA
STATIONARY GAME APPARATUS
200a
PORTABLE GAME APPARATUS
100a
S868
ENCRYPTED CHARACTER DATA
ENCRYPTED CHARACTER KEY
S867
DECRYPTION (D2)
DECRYPTION (D1)
CHARACTER KEY
S869
CHARACTER DATA
MEMORY CARD

FIG.43


SERVER APPARATUS
STATIONARY GAME APPARATUS
MEMORY CARD
S871
BILLING AMOUNT CALCULATION
S872
OBTAINING BILLING DESTINATION ID
S873
PERFORM DIGITAL SIGNATURE ON BILLING AMOUNT AND BILLING SOURCE ID USING PUBLIC KEY OF MEMORY CARD
BILLING AMOUNT, BILLING SOURCE ID, SIGNATURE DATA
S874
BILLING AMOUNT, BILLING SOURCE ID, SIGNATURE DATA
S875
S876
VERIFY SIGNATURE DATA USING SECRET KEY OF MEMORY CARD
S877
RESULT?
FAILURE
FAILURE INFORMATION
S878
S879
SUCCESS
S880
BILLING SOURCE IDs IN ACCORDANCE WITH EACH OTHER
NO
YES
FAILURE INFORMATION
S881
SUBTRACT THE BILLING AMOUNT
S883
S882
END
END
END